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Original Articles

INTRATYMPANIC INJECTIONS OF PILOCARPINE IN CHRONIC CATARRHAL DEAFNESS.*

ROBERT WINTHROP GILLMAN,
Detroit.

Politzer, some fifteen years ago, recommended the employment of solutions of pilocarpine introduced into the middle ear for the relief of certain cases of chronic catarrhal deafness. He is still following this practice, and strongly asserts that favorable results are almost sure to follow its application in the hypertrophic form of the disease.

For the past two years I have been treating many cases of O. M. C. C. with intratympanic injections of pilocarpine, and, although I have not observed any astonishingly favorable results follow this medication, yet, on the whole, I feel satisfied that some patients were benefitted by its use. To be sure, each treatment was not restricted to this local injection. Vibratory massage to the affected drum-heads was applied in all cases permitting of it. Any pathological conditions found in the nares or pharynx were attacked, and the general health and hygiene of the patients were most carefully considered, and in almost all of the cases improved.

The method of introducing the solution into the middle ear consists in first passing the eustachian catheter, using the diagnostic tube in order to determine the permeability of the eustachian tube. Five to eight drops of a one to two per cent. solution of the muriate of pilocarpine, warmed, are dropped into the catheter and by means of the Politzer bag the solution is forced into the middle ear. Frequently the hearing after the injection is made temporarily worse, but usually the patients complain of no discomforts. I have never observed salivation follow an injection of this quantity and strength.

*Read before the Detroit Ophthalmological and Otological Club Dec. 2, 1902.

I usually treat the patients every alternate day, for the first month, twice a week, for one or two months, and then discontinue the treatment for a period of rest.

Several patients who have been in my charge from season to season for six or seven years, growing steadily harder and harder of hearing, since adding pilocarpine injections to their treatment, have held their own for the past eighteen months. On the other hand many cases of chronic catarrhal deafness were not any more affected by the pilocarpine medication than by other treatment, and progressed to the bad in spite of all my efforts to effect an improvement or even a halt on the muffling of the drums in this too common affliction of mankind.

An unusual and, to me, unaccountable condition was brought to light in the following case under the pilocarpine treatment: L. A. C., aged 42, lawyer, first consulted me seven years ago, complaining of slight difficulty in hearing general conversation. Mother was profoundly deaf since girlhood, and members of her family were also deaf. Patient was fearful of hereditary influence in his case, although his three brothers and one sister possessed normal hearing. A careful physical and functional examination of his hearing apparatus revealed but slight evidence of an abnormal condition. A few months after this consultation he found himself markedly hard of hearing, and during my absence in Europe, consulted an aurist who treated him, on and off, for two years, when he again came to me and I have had him under my professional care ever since. His case is one of typical simple O. M. C. C. hypertrophic. One year ago Dr. Fred Whiting, of New York, examined his ears, and his diagnosis of the case agreed with mine. He gave him a gloomy prognosis, saying the condition was such that it would progress slowly or faster depending on how he cares for or neglects himself. In August, 1901, the hearing of his right ear was reduced to hearing ordinary conversation at 12 feet distant and a whisper at 10 feet away. With the left ear ordinary conversation could be heard at 15 feet distant and a whisper at 10 feet.

Injections of five or six drops of a 1% solution of pilocarpine were now incorporated in the treatment which he had been receiving, and which consisted in most part of spraying the nasopharynx and neumatic massage of the membrana tympani. In six months, the hearing distance of the right ear had improved two feet for both ordinary conversational voice and a whisper. The hearing of his left ear, which had always been the more acute, was reduced to 12 feet for ordinary conversation and 4 feet for a whisper—a loss of 3 and 6 feet respectively. Tests made each month since February show conditions unchanged. Whether the pilocarpine injections are responsible for an improvement in the hearing of one ear, and a decided curtailing in the hearing distance of the other, and the reasons therefor, I am not prepared to state.

Case 2. Mrs. F. C. B., aged 32, first consulted me in the fall of 1899, with the history of having suffered about one year from marked hardness of hearing of the right ear with subjective noises in the head. On examination I found the right ear suffering from simple O. M. C. C. hypertrophic. Left ear was normal. The right ear could not hear ordinary conversation at 12 feet distant. I had her under my care for three months, and during this time there was no improvement in her condition. As she was starting on a Euro-

pean trip, I advised her to consult an aurist, which she did, on reaching Paris, and who advised her to have no treatment, as her hearing could not be improved. I wrote her to consult Prof. Politzer, at Vienna; on seeing her he placed her under the "Pilocarpine injection treatment" for six weeks. She noticed an improvement in the hearing of the right ear very soon after beginning this treatment, and at the end of six weeks she was delighted to find herself with equally as acute hearing in the right ear as in the left one. She has had several returns of the complaint in the right ear since her return from Europe in 1901, but it yields promptly to a 1 per cent. solution of pilocarpine injected into the tympanic cavity, and pneumatic massage to the drum-head.

Perhaps no disease to which the flesh is heir demands quite so much courage both on the part of the patient and physician as chronic catarrhal deafness. The etiologist knows well, from constant contact with these unfortunates, not to paint a rosy future for their inspection. The surgeon should seek to arouse in the patients the hope that the disease may be arrested or at least its progress retarded, and they should be informed that their ears are in such a condition that they should receive regular attention. This course will do much to prevent the patients from becoming despondent, a result which is often observed.

In short, from my experience in the use of pilocarpine injections in chronic catarrhal deafness, there would seem to be cases in which, when taken with allied treatment, it proves absolutely effective; while in others it may simply avert the worst consequences; and in a third, and perhaps the most frequent class, the disease fails to respond to its influence.

TREATMENT OF PUERPERAL SEPSIS.*

WM. F. METCALF.
Detroit.

I can think of no more important subject for your consideration than the Treatment of Puerperal Sepsis. I present only my own reading of the clinical phenomena of this fearful affection.

All inflammatory conditions of the genital tract should be properly treated before conception. In cases in which the symptoms of peritonitis appear within twenty-four hours of delivery the cause is usually found to be a ruptured abscess of tubal or ovarian origin. Such cases usually die within three days. When endometritis exists there is more likely to be adherent placenta which increases the liability of infection. When there has been a previous gonorrhoeal vaginitis the vulvo-vaginal glands usually harbor the infection. Many women become infected by their husbands during the later months of pregnancy, the infection traveling up the tract after delivery, preventing complete involution and causing tympanitis and fever. The majority of such cases, I believe, recover with impaired organs regardless of treatment. The accoucheur should insist upon the employment of a nurse who has a knowledge of surgical cleanliness. She should disinfect the hair-covered skin about the vulva before examination is made. In cases where infection is suspected a vaginal douche should be given before examination. Bichloride of mercury solution is objectionable because of its astringent ef-

*Read before Section on Obstetrics and Gynaecology at the annual meet of the Michigan State Medical Society, at Port Huron, 1902.

fect. A solution of lysol is efficient and acts as a lubricant. The attending physician should be as thorough in the disinfection of his hands as though he were preparing for an abdominal section. Rubber gloves can be boiled and are therefore safe. If there be the slightest doubt about the complete removal of the secundines, or if from imperfect uterine contractions there is reason to suspect retained blood-clots, the fingers should be inserted into the uterine cavity and their removal effected.

If tear extend through the cervix uteri into the sub-peritoneal cellular tissue or into the peritoneal cavity it should be repaired as soon as possible. Tears in the vagina should be repaired, the mucous membrane edges being accurately coapted. Repair of the perineum should be such as to prevent the formation of pockets in which there may be accumulation and retention of discharges. If lacerations have occurred vaginal douches should be used to prevent such retention.

In one class of cases we find retained secundines. The micro-organisms enter and elaborate their toxines in the decomposing debris, but the uterus generally contracts after being emptied by the finger and disinfected. The evidences of infection quickly disappear. The curette is indefinite and dangerous and should be used only where the adherent placenta cannot be removed by the fingers. With it there is liability of wounding healthy tissue and no surety that all necrosing masses will be removed. The irritation caused by the presence of such necrosing tissue causes an inflammatory or infiltration zone beneath. The use of the curette may destroy this barrier, which would be dangerous unless we succeed in making the uterine cavity sterile. I am in the habit of thoroughly swabbing the uterine cavity with a mixture of Churchill's tincture of iodine and carbolic acid in equal parts and loosely filling it with iodoform gauze. We should not be satisfied with simply lessening the infection and saving the life of our patient but our effort should be to prevent chronic pathological change.

Case 1. At 10 p. m. March 9, 1902, I saw in consultation Mrs. W., age 24. She had been delivered of her first child prematurely three days before. Her temperature was 101.5° and pulse 130. She was at once sent to Harper Hospital, where, under anaesthesia I removed with my finger some placenta and decomposing blood-clots. The uterus showed good tone, contracting as soon as emptied. Detroit Clinical Laboratory reported Staphylococci and Streptococci present. At 4 a. m. the next morning her temperature was 103.2° and pulse 140. (It is not uncommon to find chill and high temperature following within six hours the clearing of the uterus in such cases). The temperature was normal by evening of the same day, March 10, and remained normal. The gauze was removed at the end of thirty-six hours. No subsequent intra-uterine douches were needed.

Case 2. Mrs. D. entered Harper Hospital March 2, 1902. She had been confined about one week before. Elevation of temperature was discovered upon the second day after delivery. Upon the third day some small pieces of placenta were removed and the uterine cavity douched with 1-4000 bichloride solution. Within twelve hours her temperature was normal and remained so for twenty-four hours. It then began to rise and when she entered the hospital her temperature was 101° and pulse 120. Examination showed streptococci. Thorough intra-uterine douching was given at noon. Her temperature was

normal that evening and remained so for twenty-four hours, or until the evening of the 3rd. The discharge was profuse. The intra-uterine douche was repeated once a day until the 7th, when she had a severe chill, followed by a temperature of 104.4°. Douching was then ordered every eight hours because improvement followed each douche. Temperature became normal on the morning of the 9th, and did not again rise. She left the hospital on the 13th.

In another class of cases there may be found no retained secundines or blood-clots, the products of the germ passing quickly into the circulation. There is no evidence of infiltration in or about the uterus. The organ is large, flabby, and toneless. Examination shows the presence of the streptococcus. The discharges have no odor. They may be diminished, or profuse, thin, and gray. In the beginning, the temperature usually ranges from 99° to 102°. Many cases have no chills. Generally the patient feels well and does not understand why her attendants are so anxious about her. In a few days albumin may appear in the urine, ralles are heard over the posterior thorax, temperature and pulse-rate gradually rise and death results at about the end of the third week.

Case 3. Mrs. J., age 38, was brought to Harper Hospital Dec. 5, 1901. She had been confined about ten days before and had been curetted twice. Temperature 101.2°, pulse 102, respiration 28. A trace of albumin in urine. Fine moist ralles were detected in small areas over posterior surface of both lungs. The abdomen was flat. There was no tenderness or evidence of adhesions or infiltrations. Discharge not profuse, thin, gray, and odorless. Infection, streptococcus. I gave a bad prognosis and refused to operate. The next day, Dec. 6, her temperature was 103°, pulse 118, respiration 32. Dec. 8, temperature 102.8°, pulse 124, respiration 28. Dec. 9, temperature 103.8°, pulse 136, respiration 50. Dec. 10, temperature 105.8°, pulse 160, respiration 70. Dec. 11, she died.

In another class of cases, owing either to greater power of resistance on the part of the patient or to a less virulent culture of the streptococci, or to both, or to a less spacious atrium, inflammatory barriers are for a time built around the infected area. In these cases if the surgeon is called early enough and gives proper aid, the life may be saved. Specific rules cannot be given for the conduct of these cases. General principles of surgery must govern. When, where and how to interfere or whether to interfere at all, must be determined by a careful study of the individual case, i. e., by the pathological conditions found. To bring the matter to your attention for discussion permit me to say that when, after thorough cleansing of the uterus, that organ still remains toneless, with no tendency to peri-uterine infiltrations, or adhesions, and there be observed progressive increase in gravity of symptoms, hysterectomy with removal of as much of the broad-ligament as possible and thorough drainage of the entire pelvis with gauze is the safest procedure. When, however, after such operation the patient recovers, the operator must in a certain number of cases feel uncertain as to whether the patient might not have recovered without removal of the uterus. This uncertainty has induced me to drain by free cul-de-sac incision, through which iodoform gauze is packed loosely into the pelvis well out along and behind the broad ligaments. If such conditions have existed for longer than ten days, hysterectomy will fail in

the majority of cases. This is true of all other forms of treatment.

Case 4. Mrs. B., age 34, has one child six years old. She had an abortion two years ago; no fever following either. Had always suffered during menstruation, otherwise healthy. She was delivered of a healthy child Dec. 25, 1901. Subsequent vaginal douches were not used. On the evening of the 29th she had what were called several fainting spells, pulse very weak. On the 30th her temperature was 104°. I saw her on the 31st, seven days after her confinement. Her temperature was 103.6°, pulse 120, uterus large and flabby, but its cavity was empty, no evidence of inflammatory deposit, lochia scanty, no tenderness in abdomen or pelvis, no albumin in urine. Examination of thorax negative, infection streptococcus. She was sent at once to Harper Hospital. Intra-uterine douche given and physic strychnine, and application of ice-bag ordered. The next morning her temperature was 104.6°, pulse 120 and weak. I at once removed the uterus and its appendages per vagina; gauze drainage. At midnight her temperature was 107°. She died at 2:10 a. m. the next morning.

I have had two recoveries in six cases in which hysterectomy was done after the end of the second week. I favor the abdominal operation in these cases because when the abdomen is opened if there is found a tendency to infiltration of one part drainage of that area may be instituted and the major operation avoided. If metastatic abscess be present all forms of treatment will fail in all cases.

When a tendency to local infiltration or deposit can be determined, drainage should be established by the most direct route; in some cases through the posterior cul-de-sac.

Case 5. Was called to see Mrs. F., October 31, 1901. She had aborted two weeks before. Her fever had attracted attention about the third day. She had been curetted, had intra-uterine douches and the usual systemic treatment. Her temperature was 101.6°, pulse 108. The uterus was pushed forward by a large abscess in the posterior cul-de-sac. I sent her to the hospital and established free vaginal drainage. She returned to her home well in two weeks. No bacteriological examination of the pus was made.

In other cases drainage should be established through incision above Poupart's ligament or above the illac crest, getting down to the lymphatics of the broad-ligament without entering the peritoneal cavity. I have never yet seen a case in which the lymphatics of the left broad-ligament were not involved before those of the right. I have watched such cases until abscess formed and discharged spontaneously without apparent involvement of the lymphatics of the right. Drainage should be established before the formation of pus.

Case 6. Mrs. A., age 21. She had been married less than a year. Had menstruated only twice before marriage. Had been troubled with profuse lucorrhoea for two or three years. I saw her April 3, 1902. She had been confined two weeks before. Her attending physician said that no vaginal douching had been used until fever was discovered on the third day. An intra-uterine douche was given upon the fifth day. Bi-manual examination showed fundus of uterus drawn to the left, and left broad ligament thickened. She was sent to Harper Hospital that evening. Her temperature was 103.2°, pulse 136. Specific gravity of urine 1012, a trace of albumin but no casts. I made abdominal section next morning, April 4. I found

no adhesion of intestines and only slight of omentum. There was no wall built to protect the abdomen from infection yet the lymphatics of the left broad-ligament were filled with pus. The left tube and ovary were healthy but their connection with the uterus was severed by the presence of an abscess in the cornuum, through which I easily forced my finger into the uterine cavity. After protecting the abdominal contents by gauze pads I removed the left uterine appendage, made a free incision above the crest of the illium, cleaned the part as thoroughly as possible of pus, and packed the infected areas, bringing the ends of part of it out over the crest of the illium, and of the rest out through the uterus into the vagina. This dressing was left in place for four days. When I removed it I found there had been slight suppuration in the central abdominal wound, to which the fundus of the uterus was adherent. Twenty-four hours after the removal of the drainage I gave the first wash, of half strength peroxide of hydrogen, followed by normal saline solution. Water thrown into the uterus came out through both abdominal incisions. After this 1-4000 bichloride of mercury solution was used. Her condition gradually improved and when she left the hospital on April 18 her temperature was 99.4° and pulse 108. Report from her attending physician April 30 was that the suppuration had ceased and that her general improvement continued. Culture upon blood-serum of pus taken from broad ligament showed a profuse growth of staphylococcus pyogenes citreus. The culture upon ager showed only streptococci.

About three years ago I discarded antistreptococcic serum as useless. I was induced to use it, however, in the following most instructive case.

Case 7. Mrs. C. was delivered of a child at full term May 27, 1900. Three days later her temperature was 102°. The uterine cavity was then thoroughly cleansed and disinfected by the attending physician. The symptoms of sepsis continued. She was sent to Harper Hospital June 1. Her temperature was then 102.2°, pulse 126. Uterine cavity was large, not much tenderness. Bacteriological report—streptococci numerous. I requested that Dr. Longyear see the case, which he did June 2. He advised swabbing the uterine cavity again with carbolic acid and iodine. This was done at 4 p. m. the same day, and the cavity packed loosely with iodoform gauze. At midnight her temperature was 97.2°, pulse 100. At 8 a. m. the following day the temperature was 100°, pulse 96. Ten c. c. of antistreptococcus serum was administered at 10 a. m. and 10:30 p. m. The temperature at 4 p. m. same day was 100.6°, pulse 96. The temperature then gradually arose to 101.4° at 8 a. m. On the 5th, at 9:30 a. m., 10 c. c. were again given. At noon the temperature was 101.8°, pulse 108. On the 7th she complained of pain in the left ovarian region. Ice-cap applied. Considerable discharge from uterus. Eighth, pain in left leg so severe that morphine had to be given. Chilly sensations at 10:15 p. m., temperature 102.4°. Ten c. c. given at 5:30 p. m. on the 9th. At 4 a. m. on the 10th, temperature 104.4°, pulse 130. The 10 c. c. repeated at 10:30 a. m. on the 10th. At 4:45 the temperature was 103.8°. On the 11th the pain disappeared from the leg. On the 12th, coughing became troublesome with pain under the right shoulder, circumscribed pneumonia diagnosed. Eighteenth, cough troublesome, breathing labored, severe pain in left groin. On 19th examination of the

urine showed specific gravity 1018, trace of albumin and a few granular casts. Ten c. c. given at 4:30 p. m. Twentieth, severe pain in left leg, 10 c. c. given at 10:30 a. m. Twenty-third, again examined by Dr. Longyear, who called attention to the enlargement of the spleen. Much nausea and vomiting. Twenty-seventh, pain in leg less. Nausea better. Symptoms remained practically the same throughout the month of July. July 31st, temperature 102°, pulse 126. A hard mass had formed in left inguinal region, I made free incision close to crest of illium, found the mesentery of lower half of descending colon, of sigmoid flexure and of rectum and subperitoneal tissue in internal iliac fossa infiltrated, forming a mound upon the top of which the colon was stretched so tense as to cause almost total obstruction. Drainage with iodoform gauze was established. The temperature was normal the next morning, pulse 92. Temperature remained normal for two days. It then began to rise and showed a zig-zag line with no regularity, ranging from normal to 103° until on August 18 the hypodermic administration of nuclein was begun 3ij daily until the 26th. The sputum was bloody from Aug. 12 to 25. Aug. 9, examination of blood showed 2,670,000 red and 30,000 white, principally poly-morphonuclear. August 28 I detected fluctuation below crest and outside of the ilium. Incision showed that pus bathed the iliac crest and extended beneath the lumbar fascia. The temperature went to normal but rose again upon the 31st to 102.2°, when other pus-pockets were found and drained. Sept. 6 she had been suffering much pain in abdomen for several days. I extended the first incision, entered abdomen, walled off general cavity with gauze and established more perfect drainage from mesentery of colon. She now gradually improved, the temperature becoming normal on Sept 8, not to rise again. During August and the first week in September there was almost continuous nausea, patient largely supported by enemata. By the mouth throughout nearly the entire case the principal article of nutrition was bovinine. She left the hospital on Sept. 23. Her health gradually improved and she was apparently perfectly well six months later and has remained so.

DISCUSSION.

J. G. LYNDS, ANN ARBOR: I congratulate Dr. Metcalf on his excellent paper. The better way, of course, is to prevent sepsis rather than to treat it after it has occurred. A great many of those cases, with proper care, can be prevented; but it is no disgrace to any physician to have a case of puerperal septicemia. It may be that it has followed some carelessness on his part, but if careful it cannot have been his fault. There are so many other sources from which infection may occur that a physician should hardly blame himself for a case, unless he thinks that he has made some error in his technique and care of the case. It is getting so that when a physician has a case of puerperal septicemia he is blamed more or less by the laity. Many seem to think he has not taken proper care of the case, or it would not have occurred. It is not necessarily so, however, as we all well know. Hysterectomy in puerperal septicemia is certainly indicated in a certain class of cases, but where the infection is general, be it strepto-cocci infection, or whatever kind, I don't believe it can do any good; I believe it does harm; the shock of the operation certainly must lessen the vitality and the resistance of the patient, and it does not remove the source of the trouble.

There are certain cases where there is something left in the uterus and infection has taken place, when cleaning out the uterus thoroughly is sufficient to stop the process; but where the infection has become general, I do not believe that curetting is sufficient, that hysterectomy or any other operation will do much good. Hysterectomy is indicated in a

class of cases where the infection is confined to the pelvic organs, to the uterus, to the cellular tissue above the uterus, or some suppuration in the tubes or ovary, possibly. Dr. Metcalf speaks of infection invariably taking place on the left side. I can recall several cases where the right side became infected and apparently there was no infection of the left side; abscesses formed in the right side, so that I think it may take place in either side. Perhaps more likely in one side than the other; I am not sure of that, however. The use of strepto-coccic serum in this disease is largely problematical as yet, and I have seen some very desperate cases recover without the use of those agents. The resistance and vitality of the patient is an important factor in overcoming those infections, and many will ultimately recover. Of course, the majority, where they are so bad, do not recover; they die; but the great secret is to prevent the infection rather than to try to control it after once it has occurred.

W. F. METCALF, DETROIT: I have little further to say. The doctor speaks of the limited field for hysterectomy; I think that is very proper. No one should do it except after much experience and mature reflection upon the case and upon many cases. He believes positively that there is no general infection that the resistance of the system cannot overcome; and also, in connection with this fact, that the uterine tissues, sinuses, are filled with pus, and that thorough drainage cannot be established without sacrificing the organ. That would bring it to a very limited use. I did not wish to convey the idea that I thought the infection showed in the left broad ligament exclusively, and not in the right. I mention this because those serious cases that have come to my attention have just happened to show themselves in the left.

OBSERVATIONS UPON THE TECHNIC OF ABDOMINAL SURGERY.*

H. O. WALKER,
Detroit.

Before entering upon our subject proper, it will not be out of place to say a few words upon disinfection, for upon our method and character of disinfection rests our results in surgery, and particularly so in abdominal surgery, and it is safe to say that about 40 per cent. of all surgery is done to-day in the abdominal cavity. (Possibly done too often). This estimate is made from looking over a number of large hospital records. I find in looking over my work of last year, which is general in character, 437 operations were done in all, 197 of which were abdominal in character, including operations for appendicitis, vaginal and abdominal hysterectomies, upon the gall-bladder and ducts, liver, stomach, intestines, kidneys, pancreas, vesical bladder, tubes and ovaries and hernias, which is rather a greater per cent. than mentioned. The operator in surgery must not only be the architect, but the builder of his work. A finished structure needs a master mind, a foundation not of sand, but of rock-like firmness, proper material and competent assistance. While our foundations are not always of the best, yet preparation, execution and after-care restores many a diseased body to health. Therefore proper disinfection is an important factor in our construction of a successful operation. Since Pasteur taught us that the great enemies of surgical work were micro-organisms, then began the great reform in surgical technic. Lister's first efforts were cumbersome and impractical; he tried to do too much; the wholesale destruction of microbes was dangerous, yet to him must be given the credit of giving to the world the era of Antiseptic Surgery. Evolution produced the so called aseptic surgeon and further evinced simplicity of surgical details. Simplicity is not acquired in a day, but means a long period of experience. The combination of an acid fat with an alkali, namely soap, is an in-

*Paper read before the Jackson County Medical Society, Jan. 6, 1903.

vention that has proved of incalculable value in operative technic. Its use for ten minutes with hot water upon the hands of operator, assistants and site of operation is the great preliminary to disinfection.

Then comes the choice of an antiseptic (for let it be remembered that antisepsis and asepsis must go hand in hand to combat sepsis), which, as a rule, is left to the experience of the operator, and this is largely one of convenience. For what may be agreeable to the hands of one operator may be just the opposite to another. This is likewise the same of patients. Therefore the question of hand disinfection is a matter of personal equation. It must be remembered, however, that there is no method of absolute sterilization of the hands, as has been proven by frequent laboratory experiments. Fortunately the micro-organisms of the deep layers of the skin are few and not virulent. It is the bacteria that cling to the skin of the hands that are deadly and should be removed by mechanical and chemical disinfection; therein lies its simplicity, which, however, takes time. My method after many years of experience with different chemicals, consists of the washing as mentioned above, followed by an alcohol wash of a minute or more, finally an immersion in a bichloride solution of 1 to 1000, when the hands must be covered with an aseptic towel until the operation is commenced. Constant vigilance is the price of good surgery.

RUBBER GLOVES.

The wearing of rubber gloves, although they interfere somewhat with the sense of touch, possess certain advantages over the bare hands, especially where there has been a previous exposure to virulent sepsis; it avoids for the next patient the danger of possible infection, as no process of disinfection will remove strepticocci from the hands, at least for a few days. Hence the necessity of wearing gloves in all infected cases operated upon to guard against future infection.

Recent experiments by Heile demonstrated that the sweating beneath rubber gloves increase the bacteria on the surface of the skin, and in a prolonged operation with a possible injury to the gloves, gives greater opportunity for infection. Disinfection of the hands is just as important with gloves as without. While thin gloves are more convenient and less expensive, yet a thicker glove is safer and more economical in the end. A set of rubber gloves should be a part of every surgeon's armamentarium, whether he uses them in every case or not. Simple hand disinfection does not hold good throughout an operation, for redisinfection should be resorted to from time to time, to guard against infection by possible contact. Sterilization of sponge and dressing material is best provided for by moist heat followed by dry heat evaporation. All instruments should be boiled except knives and needles, for prolonged boiling destroys the temper of the edges. To prevent this they can be washed before and after using with alcohol, and when not used during the operation can be placed in a dish of alcohol. Sutures and ligatures of all kinds should be sterilized chemically, as moist heat destroys, while dry heat is unreliable. Ochsner's method, or a modification of it, is used largely by many of the western surgeons.

OCHSNER'S METHOD.

"Catgut is prepared by immersing in sulphuric ether for one month, then for one month in strong, commercial alcohol,

in which one grain of corrosive sublimate to the ounce has been dissolved, the solution being renewed once during this time. It is then preserved indefinitely in a solution of one part of iodoform, five parts of ether and fourteen parts of strong, commercial alcohol. It should never be handled by any one except the surgeon and the chief assistant.

The jar containing the ether in which the catgut is kept for one month should be filled only about one-half with the loose coils of ligature and then it should be filled with ether; it should be closed air tight and should be picked up every day or two and shaken in an inverted position in order to wash off any substance which may accumulate upon the surface of the coils. At the end of two weeks the ether should be removed and fresh ether substituted.

The same precautions should be taken with the solution of corrosive sublimate in alcohol. It is especially important not to wind the catgut tightly before placing it in these solutions, because this may prevent the solutions from penetrating all parts of the material.

One precaution is necessary in the use of catgut which has been prepared in this manner; it must not be placed in water before it is used at the time of the operation."

It will be seen by this brief introduction that disinfection is the great aim of a conscientious surgeon, and while it seems simple, it is one of the most difficult things to accomplish. There must be harmony and system all along the line. Everybody must be clean and everybody must keep clean until the last finishing touches of the operation are made. There must be no weak links in the chain of work.

It goes without saying that a familiarity with abdominal topography is essential to the invasion of its cavity, yet the most important event is the preparation for the invasion, which first consists of a thorough emptying of the alimentary canal, freeing it of its septic contents, namely, excrement, gas and bacteria, and should be done two days before operation except in extreme emergencies. Castor oil, the old reliable cathartic, in quantities of from two to four ounces, produces no gas or colic. Operators, I observe, are returning to its use in preference to salines. An empty abdomen provides for better inspection and against intestinal crowding. Feeding from this time on to the time of the operation should be of the liquid sterilized type with plenty of water. Outside of a hot bath the night before, preparation of the site of operation is not necessary until just before commencing the operation, which consists of the ten minutes soap and hot water procedure heretofore mentioned, and a clean shave, followed by the alcohol bath and the bichloride solution finish. Previous soap poultices and bichloride dressings are frequently of more harm than good. With the provision of plenty of dressings, hand disinfection of self and assistants, as previously mentioned, with or without gloves, the patient having been anesthetized, the operator is ready to begin his work. Attention is the word of command of all concerned, and must be kept up with the utmost regard until the finish. The line of incision will depend upon the locality to be operated upon and should be along the line of direction of the muscular fibres, rather than across, cutting only through integument and fasciae while separating the muscular fibres with handle of scalpel, forceps and fingers.

This method of incision provides against paralysis from nerve trunk division as well as a better approximation of abdominal wound closure, lessening the possibility of post operative hernias.

In order to illustrate that which I wish to present on abdominal technic, I can do it better by presentation of a report of a case, than by a general discussion of the subject.

INTESTINAL ANASTOMOSIS WITH THE MCGRAW LIGATURE.

Report of a case of intestinal anastomosis with the McGraw Ligature for chronic intestinal obstruction, due to a probable malignant growth, history as follows: Mr. G. Mc., aged 40 years, father living, aged 76. Mother died suddenly at the age of 56, from what was called at the time, inflammation of the bowels. Has three sisters and two brothers living; two sisters died, one in childbirth and one of cerebrospinal meningitis. birth and one of cerebro spinal meningitis.

No evidence of tubercular or malignant trouble in the family. The patient's general health was excellent up to the time of his present illness, manifest for the first time in September, 1901, by pain in the right iliac region and constipation and passed in a few days with use of a cathartic. Shortly after this he received an injury just below right floating ribs, from the handle bar of a bicycle. The soreness lasted about six weeks. Next manifestation of pain was in February, 1902. A cathartic as before was given, and he was relieved in a few days, but from this time on until I saw him, the constipation was a prominent symptom, for relief of which he resorted to enemas and cathartics. Enemata, he soon ascertained, were of no benefit, but a free cathartic gave him relief. The attacks became more frequent and distressing. He found that after taking solid food, in the course of about ten hours, the symptoms came on, so that his diet was restricted to liquids, and while taking them he was fairly comfortable, but as soon as he resorted to solid food the attack recurred. As the cathartic began its effect he could notice passage of foecal matter and gas in the right iliac region, when he would become fairly comfortable for a while.

During all this time he attended to his avocation, that of an insurance solicitor, and was only confined to his bed on account of the trouble, for a day or two, at four different times. Latterly he had attacks of vomiting; an anodyne was resorted to only on two occasions. The pain was extremely acute only at times, its usual character was more on the order of distress from gas accumulation.

No positive diagnosis had been given him by physicians, except that of intestinal indigestion or chronic appendicitis. When I first saw him, September 21, 1902, his condition was that of worry with almost constant uneasiness in right iliac region, deficient nutrition, loss of weight about 25 pounds since February, 1902. Sallow complexion, temperature 98.6° and pulse 80. Skin moist, chest examination normal, abdominal inspection, slightly tympanitic, by palpation a distinct tumor about the size of a medium orange, smooth, moveable, and sensitive on pressure. As far as I could make out the rest of the organs were normal. Diagnosis, chronic intestinal obstruction at or near the ileocecal junction due to a growth, either tubercular or malignant in character. Advised immediate operation,

to which he consented by going to Harper Hospital, where I did the operation September 23, 1902.

Test breakfast was given and stomach contents about normal. Urinary analysis gave slight trace of albumin. Preparation as follows: Saline cathartic given, followed by enema in the morning, together with hot bath night previous, and no food to be given by mouth, only nutrient enemas every four hours. After the anesthetic (chloroform) was given, the site of operation was prepared, as already stated before. The incision was made through the outer border of right rectus muscle four inches in length, cutting through integument, fat and fasciae down to the anterior lamina of the sheath of the rectus abdominalis. After all bleeding points were stopped, it was divided, and the fibres of the muscle split and held apart with retractors, when the posterior lamina of the sheath were seized and lifted with two pairs of forceps and carefully divided between them, which of course included the parietal layer of the peritoneum. This careful division is important, as it is an easy matter to cut an intestine, and should be done similarily at whatever point entrance is made into the abdominal cavity. The next step is the siezure, with hemostatic forceps, of the peritoneo-laminal flaps on either side at one or more points, to provide against

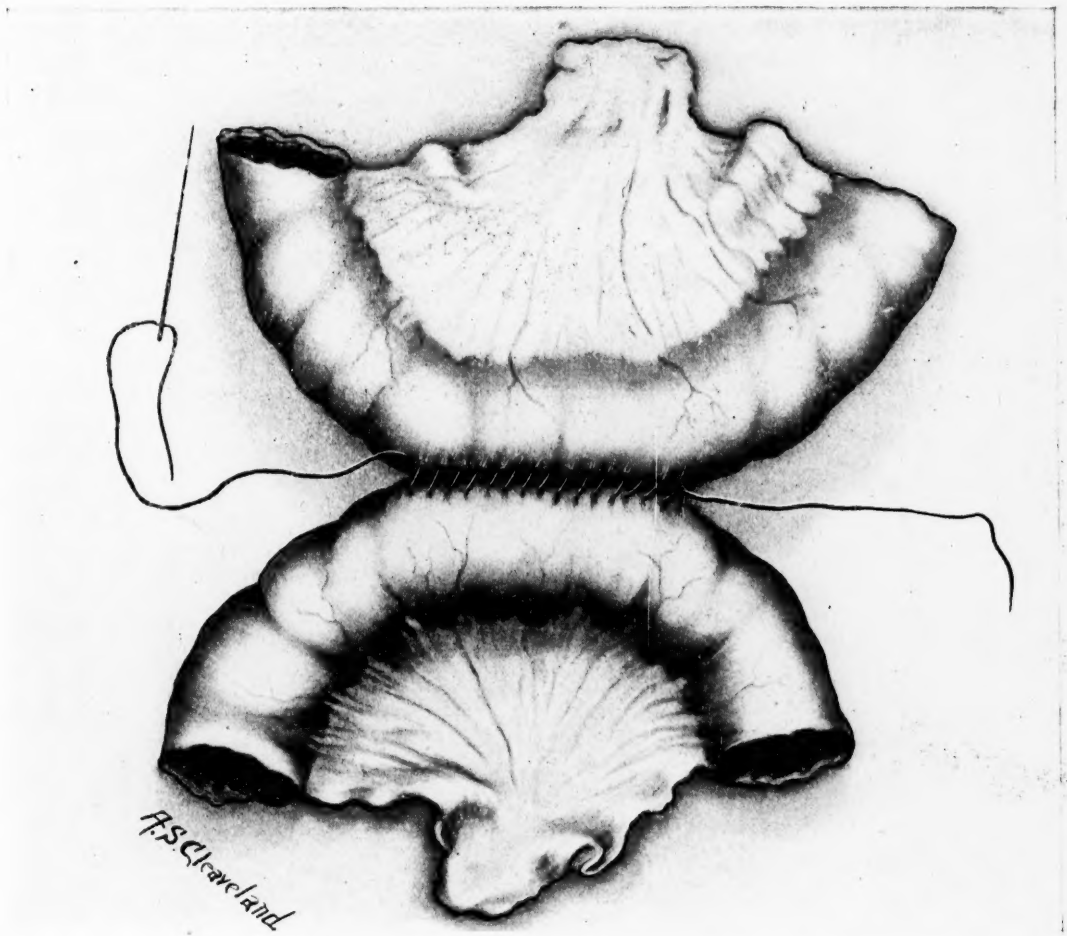

Fig. 1—Approximation of serosa with continuous silk suture.

hunting for them when the time comes for the closing of the wound. The omentum now pushed up, there being no adhesions, indicating that no previous inflammation had occurred. The tumor was readily drawn up into the wound, showing the white band on the cecum, within which was the growth, almost closing its lumen, down close to the ileocecal junction, and involving the appendix vermiformis. Several secondary nodules in the meso-colon were manifest, making it useless to do a resection. I therefore concluded, for the future comfort of the patient, to an anastomosis with the McGraw elastic ligature, by first selecting a point in the ilium about eight inches from its junction with the caecum, and another point on the ascending colon about two inches below the hepatic flexure, when the serosa were easily approximated with a silk worm suture as is observed in these illustrations showing the several steps of the operation.

Fig. 1 shows the approximation of the serosa by continuous silk suture. Fig. 2 shows the elastic ligature introduced. Fig. 3 shows one tie of the elastic ligature, with strong silk ligature underneath, ready to fasten the elastic ligature when it is drawn taut. As a matter of safety, before cutting off the ligatures, it is well to make another tie of each ligature. Fig. 4 shows the ligature tied; while Fig. 5

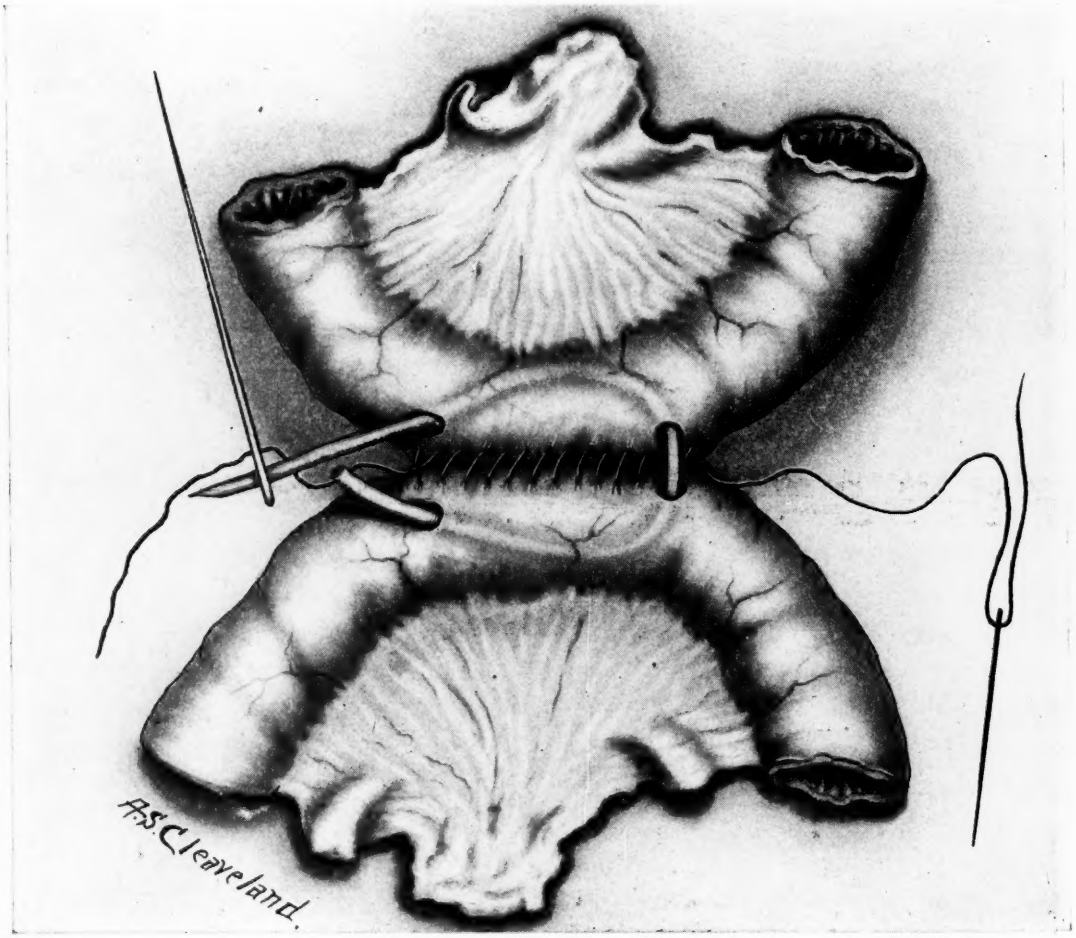

Fig. 2—Elastic ligature introduced.

shows the operation complete with a continuous suture of the seroca entirely covering the knot. It is my custom in introducing the needle to take up full two and a half inches in the bite of both the stomach and intestines, giving a large astomotic opening.

During the approximation the intestines were covered with hot aseptic towels, and especially so around the points of approximation to guard against any possible escape of feces or gas during the introduction of the ligature, which, however, there is very little liability of doing if care is exercised in pulling the ligature through the intestinal wall by keeping it taut. The closure is then made by first approximating the peritoneo-laminal flaps with double threaded, small, round curved needle of No. 1 catgut, continuously, but not tightly. The same course is pursued in uniting the muscle fibres, the anterior lamina sheath, finally closing the integument with a continuous silk worm suture, loosely, just sufficient to bring it together without pressure. Where the abdominal wound is as long as in this case I first, before doing the layer approximation, introduce three or more through and through silk worm gut sutures, which are tied loosely to act as guys during union and prevent separation in the event of too rapid absorption of the catgut.

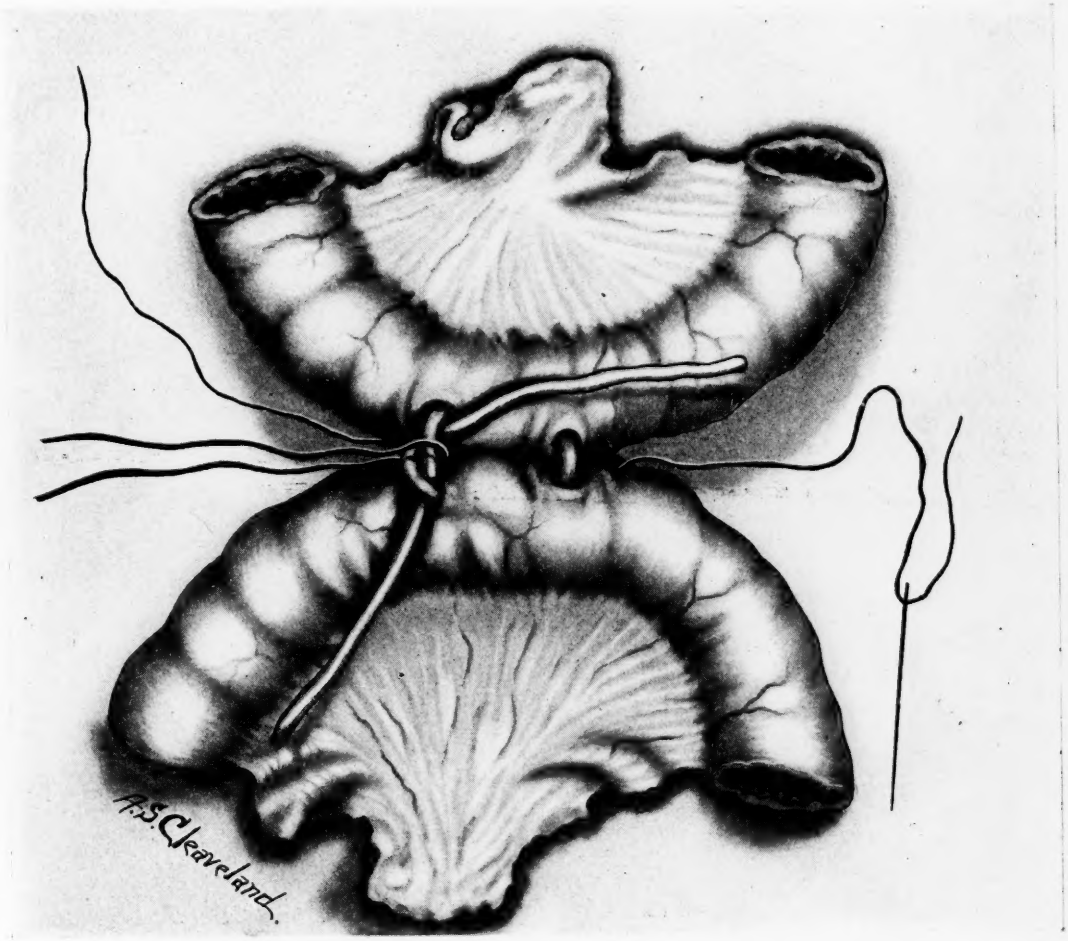

Fig. 3—One tie of the elastic ligature with a strong silk ligature underneath ready to fasten the elastic ligature where it is drawn taut.

The last act was the application of an ample amount of sterilized dressings held in place above by a strip of adhesive plaster and the ordinary abdominal bandage over all. My reasons for laying stress upon not tying sutures too tight is apparent when I say that more stitch abscesses arise from this cause than any other. Pressure necrosis does not itself cause an abscess, but it does prevent proper freedom of circulation, the principal means of repair, giving the best of opportunity for microbic fructification. A tight suture is not only painful, but causes an ugly looking scar. I forgot to mention one important fact, that during an operation, the hands of both operator and assistant should be frequently washed off in the bichloride solution, and then rinsed off in sterile water. Only once did the temperature rise in our patient to 100°. He was able to leave the hospital on the fourteenth day, but wishing to give the benefit of the X-ray treatment, he remain a week longer. Then they were given daily for ten weeks, and now every day. Since the operation he has none of the old distress from gas accumulation, nor has taken any cathartic. For the last two weeks he has had pain at the point of tumor, which on examination January 4, 1905, I fancy is larger than when I first examined him, and more fixed. Clinically the growth is probably carcino-

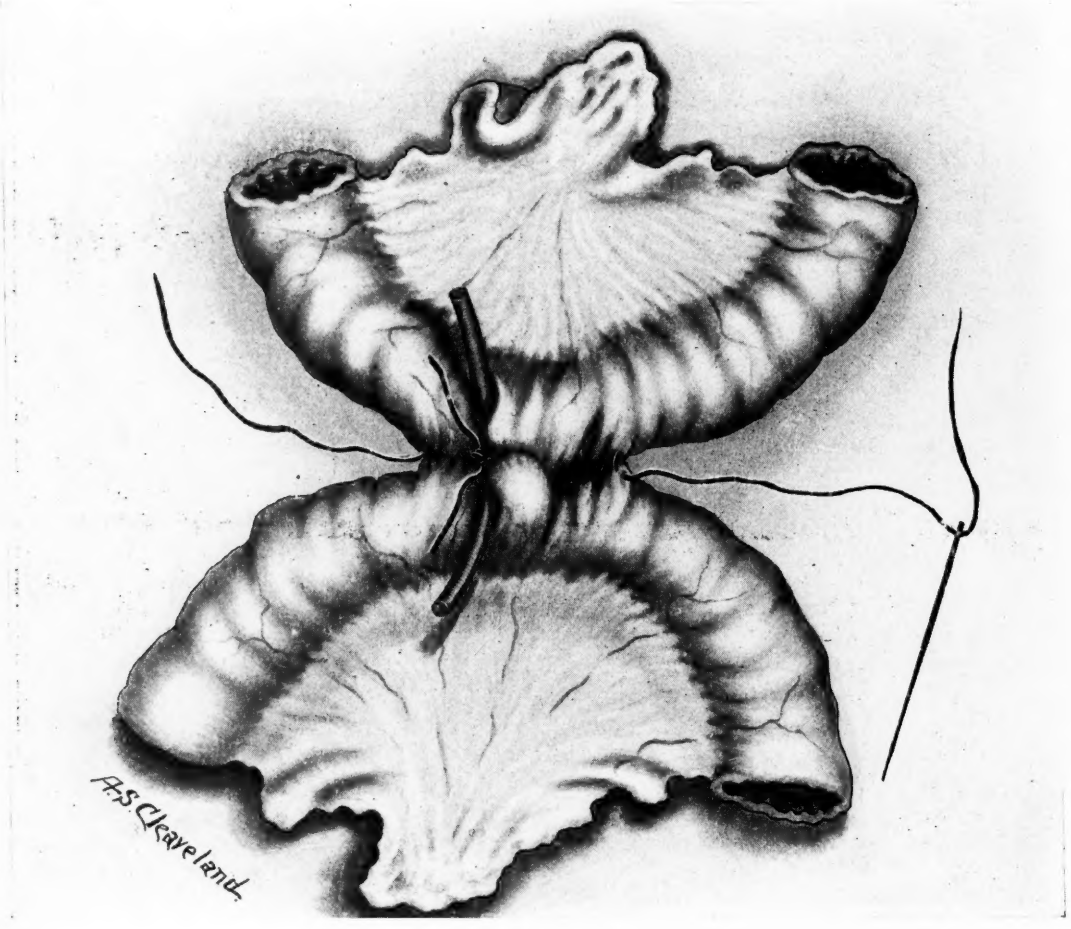

Fig. 4—Ligature tied.

matous, although at the time of operation I did not remove any of it for examination microscopically. The anastomosis is evidently satisfactory in its results.

The details of case just reported gives the technic of a simple abdominal section without sepsis. Attacks through the abdomen into the "pelvic box" are aided by putting the patient in the Trendelenberg position, particularly so when septic conditions exist, then it is, that we want to coffer dam the entire area of sepsis with soft abdominal towels or gauze to prevent its contact with healthy structure.

This coffer dam procedure is equally appropriate in appendicular abscesses, abscess of gall-bladder or any other abscess in the abdominal cavity. Irrigation is an unnecessary quantity in any operation, and especially in abdominal work, it only adds to the diffusion of sepsis when it exists. Every patient at the close of an abdominal section should receive an enema of a quart or two of a normal salt solution; it is a restorer of devitalization and provides against thirst. Transfusions of the same solution are often valuable during a prolonged operation.

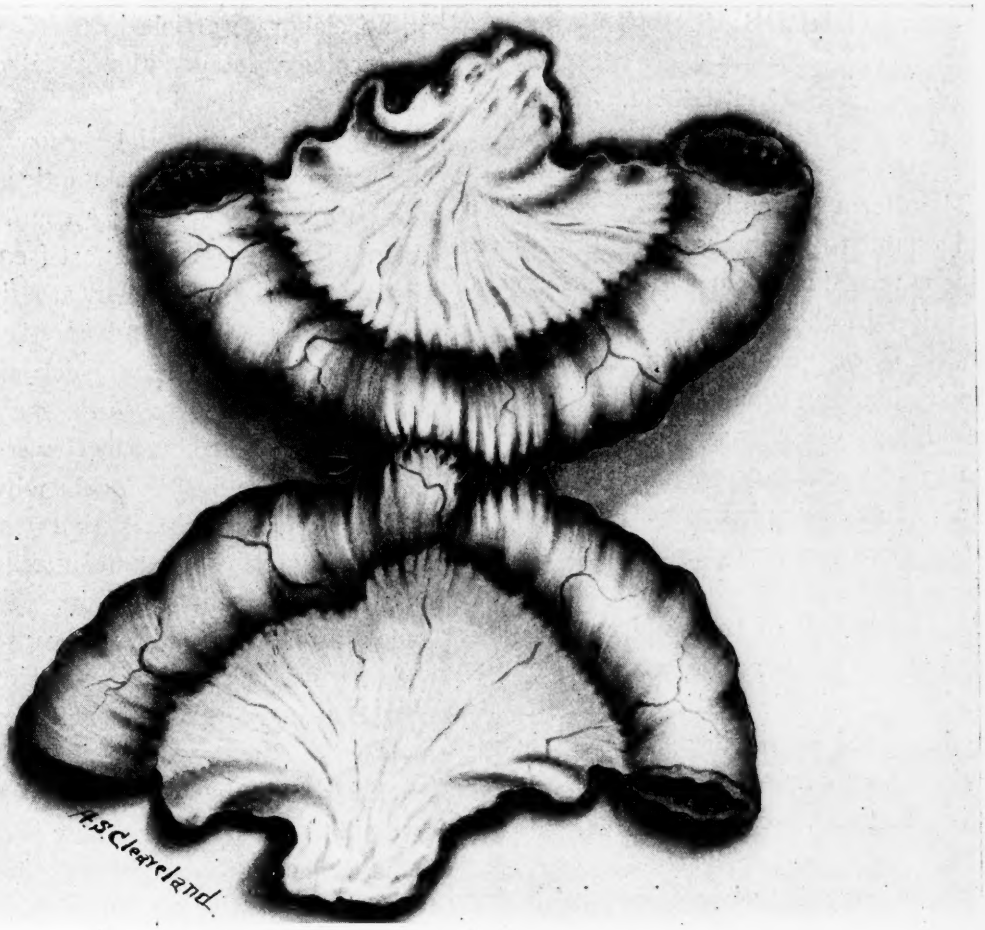

Fig. 5—Operation complete, continuous suture entirely covering knot.

In closing the abdominal incision after removal of a septic area, drainage is necessary, either by means of a glass or rubber tube or gauze covered with gutta percha tissue—the latter is my favorite method; it is self draining and can be

withdrawn without injury to the tissues.

Unnecessary traumatism either by handling with instruments, rough dressings or too strong antiseptics, is to be avoided, for young cells need encouragement in the process of repair.

UREMIA IN THE PROCESS OF CHILDBEARING.*

EARL BIGHAM,
Grand Rapids.

The term Uremia or Toxaemia, I understand to mean that condition of the system resulting from accumulation and retention in the blood of certain toxic products or excrementitious material which should normally be eliminated by the kidneys. Eclampsia occurs in from 300 to 500 pregnancies. It is a frequent result of uraemic phenomena occurring in the childbearing process. Statistics show this to be an extremely dangerous condition, as one-half of the children and one-third of the mothers are lost. All of the accidents creditable to the parturient state are increased in liability, viz: septic infection, post partum hemorrhage, thrombotic affections, etc., in this vicious blood state.

The urinary disturbance is probably due to two different causes: first, a pre-existing renal disease, or an acute condition arising in the excretory functions of the kidney during gestation; the latter condition is no doubt the more common. Dr. Charles Jewett of Brooklyn says "that the pathological anatomy of Eclampsia may be considered fairly well established, but the etiology is absolutely unsettled. One class of recent authorities ascribe the poison to maternal sources, and another to the foetus. Of the more recent theories, one refers the source of the poison to the placenta, another to insufficiency of the thyroid gland. One assumes that it is of hepatic origin; still another that the disease is the result of an infection. Dienst in an elaborate article in the Archives of Gynecology defends the foetal origin of the poison. He gives three reasons for his belief; first, that the foetus sometimes has eclampsia without eclamptic attacks on the part of the mother; second, that the eclamptic seizures occur most frequently in the last weeks of pregnancy at a time when the foetus is in an advanced state of growth; and third, that the eclamptic trouble almost always ceases on the death of the child in utero." Dr. Jewett further says that "the best working hypothesis that appeals to him is that the cause of the eclampsia is an auto-intoxication of as yet, undetermined origin. The toxaemia may be regarded as the cause both of the convulsions and the renal lesions which complicates the eclamptic state; nevertheless, while the toxaemia is the primary condition he does not think it is the most essential." Dienst says, "there is doubtless some toxaemia in every gravid patient, but this gives rise to no trouble so long as elimination is active." The main organ of elimination is the kidney, and when this fails to do its work, then the trouble begins. The renal insufficiency therefore, is the main factor in the production of the eclamptic condition. This condition, therefore, includes the albuminurias of the pregnant state which is found in a great proportion of all cases of pregnancy. It is not to be understood by a renal insufficiency that therefore there must exist a

*Read before the Section on Obstetrics and Gynaecology at the annual meeting of the Michigan State Medical Society, Port Huron, 1902.

renal lesion, as the kidney may be anatomically normal and the fault may lie in function only, as Dienst and Jewett have observed that a kidney which is not sound may functionate well under stimulation. Failure of the sound kidney to secrete properly may be due to degeneration of the heart muscle. We know that the presence of albumin does not imply a kidney lesion, nor its absence a certain proof of the absence of kidney disease. Dr. Stewart, of Chicago, says: "that it rarely happens, however, that the urine is perfectly normal in all respects chemically, physically and microscopically, where there exists any lesion of the kidney demonstrable at the autopsy. Many authentic cases are recorded where the urine was found free from albumin and casts a few hours before an attack of eclampsia, but almost invariably both were found afterward. This fact has led some authors to assert that the albuminuria and casts were the result instead of the cause of the eclampsia. That either is not the case seems probable since kidney disturbance seldom or never follows the convulsions of epilepsy, hysteria or strychnine poisoning, however violent the siezures may be."

Some authorities still believe that the toxaemia acts to produce convulsions by inducing spasm of the arterioles and consequent anaemia of the brain. Consistent with this fact is the fact that the best antieclamptics are drugs and other measures which relax the arterioles and lessen the blood pressure. Dr. Barton Cook Hirst says: "I feel that the kidneys of a pregnant woman are under a strain on account of the increased work thrown not only upon them, but upon all the excrementory organs of the body; but, as they are the chief excretory organs they feel the strain most. What the poisonous product is which affects the organism is not yet made out. Uraemia is a term at present used to cover our lack of knowledge of the subject. A recent investigation by two Italians shows the presence in increased quantities, three or four times as much as normal, of urobilin in the urine of pregnant women, an evidence of increased work thrown upon both liver and kidneys. It may be this excrementory matter which is stored up in the kidneys during pregnancy is the cause of the toxaemia which we often see at that time."

Albuminuia occurs in about five per cent. of pregnant women. In the larger majority of cases there is no significant kidney lesion and the albumin is due to a disturbed blood pressure. It is a well known fact that primiparae are three times as liable to eclamptic attacks as multiparae. Dr. Lewis, of Chicago, in an elaborate article in the American Journal of Obstetrics says as follows: "Why, in the normal process of childbearing, should we find so often the manifestations of a disturbance of the excretory functions, and what are the causes of the phenomena which we call uraemia? Most authorities are agreed that it is a uraemia, using the term in the sense of an autoinfection from retention in the blood, of matter which would normally be excreted, or an ever production of toxins beyond the powers of elimination. What this poison is and what causes it to appear in the blood of the pregnant woman have been points of controversy since uraemia was recognized as a pathological entity. As to the first, it has been answered that the poison is urea, that it is carbonate of ammonium, that it is kreatin and kreatinin, that it is a product of metabolism of the foetus, and finally that it is an infective ptomaine. As

to the second, it has been answered that the abdominal pressure causes a passive congestion of the kidneys; that the pressure on the renal arteries causes an anemia of the kidneys; that the pressure on the ureters by the presenting part causes a urinary stasis; that the irritation of the uterus on the pelvic nerves causes a reflex spasm of the renal vessels and a consequent anemic condition; that the hydremia of pregnacy causes a diminished nutrition of the kidneys and therefore a failure of their excretory powers; that the same cause acts on the liver so as to interfere with the abstraction of urea and other waste products from the blood."

It was Halbertsma's idea that all uremic symptoms were ascribable to mechanical stasis of the urine by pressure of the presenting part (usually the vertex) on the uretus as they entered the pelvis, but a great deal of the trouble must be caused by the increased abdominal pressure as well, for the conditions which produce albuminuria and eclampsia are increased in hydramnios and plural pregnancies. Statistics show that in eclamptic cases there are about five times the usual number of twins. The increased abdominal pressure seems to be an important factor, for the reason that the albuminuric condition is the greater in the latter months of pregnancy when the uterus is the larger, and consequently makes greater pressure upon the abdominal and thoracic viscera. This increase of pressure causes a general venous stasis, as shown by the hypertrophy of the left side of the heart, the varicose condition of the legs and the general oedema of the lower extremities. Dr. Lewis says: "That those cases where albuminunia is observed in the early months of pregnancy can be explained by a catarrhal condition of the urinary passages or a pre-existing renal disorder.". He says: "I may cite the researches of Meyer, who found that the ligature of the renal veins always produced albuminuria, and, further, that ligature of the renal veins of one side produced albumin from the ureters of that side only." The theory of Halbertsma is combated by the fact that convulsion and other uremic manifestations are observed when other presentations than vertex occurs. In Halbertsma's cases he reports one case where there was complete suppression for eight hours, no doubt caused by the firmly engaged head pressing on the uterus, and yet he says there was no eclampsia, and the patient made a complete recovery. Hughes and Carter in an elaborate paper based on experimental study of uremia in general express themselves as follows: "It is probable that the origin of the poison is to be traced to the character of the food, and that its production takes place somewhere in the digestive system; for the larger amount of poison is found in man, with his meat ingestion and his complex and easily deranged digestion, next in dogs, with their semi-carnivorous diet, and least in the horse, a pure herbivora. Clinically it has been well established that cases of Bright's disease improve when meats and kindred substances have been removed from the food and do best of all upon the simplest of diets, milk. Experimentally it has been shown that the urine of animals is rendered less toxic by a milk diet. These facts would all point in one direction—they refer us to the digestive tract for the origin of the poison. Their conclusions are as follows:

1st. It is probable that in addition to the pathogenic poison of uremia there are,

under certain conditions, other secondary ones active in its production.

2nd. The poison producing uremia will also produce nephritis and a fatty degeneration of the retina. (This was proven by injections into animals of uremic blood serum or dropsical effusion.) The poison is probably some albuminous substance.

3rd. It is possible to have uremia without any previously existing lesion of the kidneys. Jewett says: "If you ask why this particular intoxication is more common in gravid than in nongravid women, no satisfactory answer can at present be given. It is evident that the pregnancy has in some way a causative influence and the fact is emphasized by the speedy subsidence of the symptoms which almost invariably follow the evacuation of the uterus. It is significant that the toxemia, in the absence of chronic kidney changes, is an occurrence of the latter months of gestation. This has led to the suspicion that faults of foetal as well as maternal metabolism may be concerned in the etiology. Albumin, the detection or absence of which, as a prognostic sign, is of special interest. Authorities agree that it exists before the first convulsion in from 84 per cent. to 90 per cent. of patients who become eclamptic and it is unversally conceded that it is aluminous after one or two convulsions. Careful and frequent examinations of the urine from the earlier months will aid greatly in preventing these dire conditions by instituting proper treatment for their prevention. Herman alludes to the fact, that the albumin in acute nephritis is mainly paraglobulin, while in chronic nephritis it is chiefly serum albumin. The distinction has little importance for our purpose. It may have some relation to the treatment, since in the chronic the pregnancy can be safely trusted to go to term or at least to the viable period. Yet the history and the microscopic findings would afford a better means of differentiating between acute and chronic lesions than the character of the urine." (Jewett)

As regards to the part that urea may play in the production of eclampsia, most physicians feel secure when the elimination is near the normal—four or five grams a day. Special watchfulness is needed when it falls much below the amount. Davis found his patients were benefited by giving a stimulating diuretic when the percentage of urea did not exceed 1.5 per cent. Too much confidence should not be placed upon urea alone; that alone is not an infallible guide. We must ever remember that the urea is normally diminished in pregnancy, and is subject to variable changes depending upon dietetic and other causes. "Notable diminution of urea should always excite suspicion, and a marked falling off is usually of grave import. The weight to be attached to it must be determined in part by other clinical signs" (Jewett.) Dr. De Lee says: "I have not been able to differentiate uremia from toxemia in pregnancy, and am more than ever convinced that some disease of the kidney old or acute is at the bottom of the convulsions." He further says that without going into the causation we may say that in all probability eclampsia is due to a poisoning of the blood from an unknown source or sources, which poisons, owing to some impairment of the liver as an elaborator of poisons, to inefficiency of the kidneys as eliminators of poisons, accumulate in the blood, and, acting upon an already hyper excitable nervous system, cause convulsions, by influencing the vaso motor centers of the brain. Convulsions, if the pons and medulla are

involved, coma when the cerebrum is affected. Several writers have noticed a cessation of the uremic manifestations folfowing the death of the foetus. I have had two cases of this character in my own practice, and one of these cases was a patient eight months pregnant who presented marked uremic or toxic symptoms, but upon death of the foetus caused by a blow upon the abdomen by the husband in a drunken frenzy, all foetal movements ceased, all uremic symptoms subsided and I delivered her of a dead foetus some two weeks afterward without any trouble, and she made a fair convalescence.

In the Ninth Congress of German Gynecologists, at Giessen, May 29 to 31, 1901, eclampsia constituted one of the subjects for an exhaustive general discussion which was introduced by Fehling and Ryder. In his report of the pathogenesis, Fehling announced the following theses: "Puerperal eclampsia is a distinct and characteristic process which occurs only in the period of gestation. There is no special placenta, no special form of renal or hepatic disease in eclampsia; it is not necessarily connected with uretheral dilatation, but albuminuria is almost always present. There is no definite pathological anatomy of eclampsia. That it is contagious has not been shown, and there is no proof of Bouchard's claims that it is caused by an increased toxicity of the plasma of the blood associated with diminished or absent toxicity of the urine. Eclampsia is neither an hepatotoxaemia nor a leukomainemia. The lesions of eclampsia are associated with the presence in the blood of some coagulative substance. Finally eclampsia is an intoxication of foetal origin." Schmorl's report on pathological findings in 73 cases invalidates Fehling's claim as to no definite pathological anatomy. He found that the kidneys, without exception, were the seat of albuminous and fatty degenerative changes, with more or less necrosis. The liver also contained albuminous changes in the cells and hemorrhagic and anaemic necrosis were present. The lungs too showed thromboses and hemorrhages. The most constant changes in the brain were small softenings and hemorrhages, especially in the cortex, but also in the brain stem and in the lenticular nucleus. Also pathological changes were found in the heart but not as common as in other organs.

As regards placental cell embolism he does not think they are distinctive, because they also occur in non-eclamptic cases. He does not think the placental cells have an ability to liberate coagulative substances. From the nature of the lesions he would assume that a peculiar substance enters the blood and leads to multiple thromboses. Whether this substance comes from the foetus cannot be determined at this time. Albert believes in the microbic intoxication as a theory for eclampsia, and indeed when we come to view the part which bacteria and bacterial products play in the production of thromboses we cannot definitely exclude a microbic etiology. Kundrat May and Herzfeld think that the abnormal divisions of the abdominal aorta cause such displacement of the ureters as to render them subject to compression.

At this convention the physical and chemical conditions of the blood received considerable discussion. Füth and Kronig found that the maternal and fetal blood had the same osmotic tension and specific gravity, showing that if there were toxins in the maternal blood they did not increase its tension or gravity. Dienst found an increase of fibrin in the blood of both foe-

tus and mother, and concluded that a certain amount of poison was produced by the foetus, passed into the maternal blood, and in case elimination was interfered with, accumulated in fatal quantities.

It must not be forgotten that the failure of the urinary secretion may take place quickly, and the bladder being found full does not prove that the kidney is still excreting urine. In a case which I saw a few months since in consultation with another physician, the patient had had four convulsions before I arrived. I asked the doctor if he had examined the urine and he said, "No." He introduced the catheter and drew off at least a pint of dark smoky looking urine which almost solidified by heat. She went into another convulsion from which she never came out and died about two and a half hours after the first convulsion. Repeated trials with the catheter failed to draw any urine. De Lee says, "The latest writers ascribe most of the cases of eclampsia to toxaemia, relegating the nephritis to second place. In the vast majority of eclamptics there are distinct evidences of nephritis, or at least of the kidney of pregnancy, either in the urinary findings or at the post mortem. The writer cannot but think that the kidney of pregnancy is a low grade of inflamation. The toxaemia may cause the nephritis, and the nephritis may cause the toxaemia, by impairing the eliminatory power of the kidneys. Thus a kidney that under ordinary circumstances did satisfactory work, may under the added strain of pregnancy give out completely." Lusk rejects the uremic origin of eclampsia and thinks it is due to some reflex action or irritation. He thinks there occur many cases of albuminuria. Lantos of Budapest, believed this condition of albuminuria to be due to reflex irritation of renal and sympathetic nerves. Several authors have thought that certain changes in the placenta, such as infarcts, were a possible cause of trouble for the reason that most albuminuric cases showed white infarcts. Dr. Edward P. Davis, of Philadelphia, says: "I do not consider uraemia as an important element in the causation of eclampsia. Eclampsia and some other disorders of pregnancy result from a toxaemic condition caused by poisons of an alkaloidal nature formed in the liver, intestines, lungs and skin. Urea itself is a non-poisonous substance which represents completed metabolism. If urea is formed in abundance, the patient does well, but if instead of urea poisonous compounds are formed, disturbances of the nervous system, and often eclampsia result. These statements are based upon extensive clinical observation and upon the careful study of the literature and experiments upon this topic. Practically it is important to know that the management of cases based upon this view of the subject is very largely successful; as the urine is especially available for our study, we should ascertain its quantity, specific gravity, percentage of solids, percentage of urea and the presence or absence of sediment and microscopic debris. Serum albumin is not of especial pathological import. In the presentation of eclampsia, that treatment is most successful which removes irritating substances from the patient's diet, which stimulates the functions of the liver, intestines and kidneys most efficiently. In the treatment of eclampsia that method is best which causes the most rapid and thorough elimination. Better results are obtained in this way than by the immediate emptying of the uterus. In my experience from the view just given, eclampsia is as presentable as puerperal septic infection."

Jewett divides the treatment of eclampsia under three heads: "First, measures to limit the effects of the poison; second, measures to provoke elimination of the poison; third, measures directed to the arrest of its production. With regard to measures for the control of the nervous manifestations and the control of the nervous system such antieclamptics as chloroform, chloral, veratrim-viride, nitroglycerine and morphine are used. Chloroform for its quick effects is practically indispensable, especially if operative interference is demanded. On the other hand, it may be very dangerous. Prolonged chloroform narcosis is condemned by every authority. Chloral is less harmful, and may be given in considerable doses, as high as 120 grains or more a day. It is best given by bowel. As regards nitroglycerine, I have used it in a few cases, but I have failed to see any benefit derived therefrom. Veratrim-viride I regard with high favor. I have used it both by mouth and hypodermically with good results. Tyson says that a convulsion is practically impossible if the pulse is kept below 60. Morphine I have used in a few cases, but was disappointed as to its value. I believe it deepens the coma. In one case where only 1/3 of a grain was given artificial respiration was restored to to save the patient's life. It ought not to be given where the coma is intense. One of the recent contributions to the literature on the subject of eclampsia is by Strogonoff. He reported some 92 cases of eclampsia with a death rate of only 5, and three of these deaths were otherwise explained than by eclampsia. The essential factors of Strogonoff's treatment are these. A light narcosis is maintained by the use of morphia and chloral. He gave ¼ gr. morph. after the first convulsion, and an hour or two later 45 grains of chloral, and these are repeated with a view to keeping the patient mildly under the influence of these drugs for 24 to 48 hours. If occasion requires he empties the uterus, but that is very seldom required. He uses little or no chloroform. All peripheral irritation so far as possible prevented; even drastic cathartics, even extreme measures for diaphoresis are avoided. Strogonoff's treatment has been tried by Newell, of Boston, but not with such good success. Many British and numerous German authorities advocate the use of morphia, notably Olshausen, Veit, and Fehling. They give it in doses of ¼ gr. Despite the objections and strong prejudice that obtains against it in this country it should be given further trial till the value can be determined by definite clinical statistics." (Jewett.)

Of the methods of elimination that by saline injections are of especial importance either by bowel or subcutaneously, (enteroclysis or post mammary) Dr. Jewett says: "I have pumped as much as 20 gallons into the bowel through a double (Kemp) tube. It has been claimed that this is more effective than the intravenous or post mammary method, but it has not proven so in my hands." The intravenous method employed by some I have tried in one or two cases, but always with fear and trembling. I think it caused the death of one patient. I think the post mammary is just as effective and much safer and simpler. Of course, each method has its dangers; in the intravenous, you may get excessive heart strain, and in the post mammary, oedema of the lungs. "Dr. Jewett quotes a case in point where in a patient a large quantity of salt solution was injected post mammary. The patient developed a pronounced anasarca."

For the arrest of the over production of the poisons, it is evident that the emptying of the uterus is the most urgent in my mind, for as long as the foetus remains in utero the process still continues. I think it should be emptied as quickly as the patient's condition will tolerate, especially if the convulsions have occurred. Davis says an eclamptic patient can be made to excrete by the use of the hot pack and saline injections into the skin and bowel. Such treatment, if faithfully carried out, may save the patient from eclampsia, but if her tissues have been seriously damaged by the poison, she may recover from convulsions only to die from pulmonary gangrene or failure of the nerve centers. As regards the immediate induction of labor at the onset of convulsion authorities differ. The French school advise waiting for labor to begin and end naturally if possible, while Duhrssen and many of the Germans advise immediate "accouchement force" in eclampsia under deep anesthesia. Between the wide limits which these two schools adopt come the greater body of the profession who prefer the middle course. Each case must have its own peculiar treatment based upon the individual condition present and demanding relief. The now almost discarded venesection, I believe to have its indications especially in cases accompanied by a large amount of edema, abundance of albumin, sudden onset of toxic symptoms, full, hard bounding pulse and cyanosis. Prophylaxis is of the most importance in the treatment of the toxaemia of pregnancy, and as many of the toxic symptoms observed in pregnancy are due to deficient excretion, it behooves us in whatever manner possible to stimulate the natural emunctories of the body to their fullest extent. Such symptoms as headache, insomnia, neuralgia, vertigo, fainting spells, nausea and vomiting can be traced oftentimes to faulty elimination. These symptoms should call the attention of the physician and lead to a careful examination of his patient. As regards diet, just sufficient nitrogenous diet should be given to maintain life, and that in a form that is easily assimilated and will not throw extra work upon the kidneys. The bowels and skin must be kept active by salines and diaphoretics. The ingestion of large amounts of water is the best diuretic. Milk is the ideal diet, exclusively milk until the alarming symptoms abate, and a somewhat more extended dietary is admissable. Dr. De Lee, of Chicago, says as regards narcosis, "The arguments as to utility and safety of this procedure are not yet closed, but they seem to be tending towards the recognition of its value in the majority of cases. Give one-fourth of a grain of morphine every thirty minutes until three-fourths of a grain are taken. Give forty-five grams of chloral per rectum, and repeat in two hours if necessary. Chloroform is now recommended only when one convulsion follows another in rapid succession. Under the above treatment, this will not occur, so he desires the use of chloroform restricted to anesthesia for operation purposes."

Dr. Dobbin, of Baltimore, says: "It is my habit both with private and hospital patients when albumin is present in the urine, to make daily quantitative estimations of the albumin and urea, and record the same on a chart prepared especially for this purpose. The amount of urea is by far of greater importance than the amount of albumin. Thus albumin shown on the chart low in quantity and urea high I would wait, but with albumin high and urea low, I would interfer. After all, each case must receive the special treatment that its own conditions demand and no broad or fast rule can be applied to all alike."

Viewing this condition from all points, it must be admitted that eclampsia is a toxic condition in which some poisons of a coagulative nature exist in the blood, but as to the source of these poisons, nothing definite is known. No absolute proof is at hand to show that the intoxication comes from fetal origin.

*ENTEROPTOSIS AND PREGNANCY.

CHARLES D. AARON,
Detroit.

Enteroptosis or Glenard's disease is often due to a complication of causes. Among these repeated pregnancy is one of the very frequent for the reason that it produces a diminution in the tension of the abdominal wall. Rapid pregnancy presents conditions which favor this diminution and may superinduce enteroptosis. It is probably true that four-fifths of the cases of enteroptosis occur in women. The neuropathic condition of pregnant women may have some explanation in this displacement and consequent gastric and intestinal disturbance. Maillart has devoted much study to the relation which exists between pregnancy and enteroptosis, and has stated that he finds a certain relationship existing between enteroptosis and congenital neurasthenia.

Individuals who suffer from ptosis and become pregnant will have an increased pressure of the intra-abdominal walls. This pressure will vary directly as the uterus increases in volume. Pregnancy produces a marked improvement in the digestive functions in these cases and there is no reason why this improvement cannot be made permanent through proper treatment. This digestive betterment is especially noticeable in the latter months of pregnancy. We may hold, therefore, that normal pregnancy does not exert a bad influence on the ptosis. If after delivery the viscera are sustained for some time a contraction of the abdominal wall takes place and in due time the organs will continue in position. While the uterus is pregnant and enlarges, the organs which are displaced are steadily forced up into their normal position and the stretched mesenteries thus have an opportunity to regain their tonicity. After delivery the abdominal walls recede holding the organs in a nearly normal position. Although pregnancy is admittedly often a predisposing cause for enteroptosis, I beg leave to submit the report of a few cases in which I have found pregnancy itself serve as a cure of enteroptosis.

Case No. 1. On January 1st, 1897, Mrs. T., age 32, the wife of a dentist in Detroit, Mich., consulted me for what she called indigestion. She gave this history: She had taught school before marriage, broke down with nervous prostration and has been sick ever since. At times she could not sleep and, on account of an attack of bronchitis, was compelled to go South. Since then she has had trouble with her stomach. When she consulted me first, she complained of headache, pain after eating, eructations of gas, sleeplessness and a feeling of exhaustion. She had lost fifteen pounds in weight. An examination of her blood, urine and stomach contents proved them to be normal. On physical examination she was found to have an enteroptosis. I applied an abdominal support and treated her case in accordance with the usual methods, and, the improvement while apparent, was slow. I explained to her husband that it would be helpful to her if she were to become pregnant. He assured me that they had endeavored to prevent this up to the present time, for the reason that they did not think she was strong enough to carry a child. After explaining her condition to him carefully, she became pregnant three months later. During the time of pregnancy all her symptoms gradually disappeared, she became stronger and seemed to be practically well. After delivery, she was kept in bed longer than the usual time, so as to be sure there

*Read before the Michigan State Medical Society at Port Huron, Mich., June 26-27, 1902.

would be no dragging on the mesenteries. She had the freedom of the bed for three weeks and was not allowed to get out of it, excepting for micturition and defecation. I applied a firm band to the abdomen which was tightened morning and night, so that the organs would remain in situ. At the end of three weeks, she was allowed to get up for an hour a day and gradually for a longer time, and none of her former symptoms returned. This improved condition has continued now for four years and she seems to be practically well.

Case No. 2. Mrs. B., age 37, consulted me August 3rd, 1899. She had been pregnant eleven years previously and from that time had been troubled in many ways. During the past year she had been compelled to live on milk and lime water. At the time I first saw her, she had no appetite. Solids would produce pain in the stomach. Acids would make her mouth sore, she vomited large quantities of mucus, had eructations of gas, vertigo and dizziness, ringing in the ears; could walk only a short distance without being exhausted and bowels were constipated. An examination of her blood and urine proved them normal. The stomach contents showed hyperchlorhydria. There were large quantities of mucus in the feces. On physical examination she was found to have a pronounced enteroptosis. By applying a suitable support, electricity and symptomatic treatment, she began to improve. Eighteen months ago she became pregnant and, after delivery, she was kept in bed for three weeks with a tight fitting bandage. She has made an apparently complete recovery.

Case No. 3. Mrs. F., age 31, consulted me November 10th, 1899, for exhaustion and dyspeptic difficulties. At this time she complained of distress after meals, bloated feeling of the bowels, belching of gas, constipation, backache, tires quickly, is unable to do her housework, has palpitation of the heart, sleeps poorly and is exceedingly nervous. She has lost fifteen pounds in weight. An examination proved an enteroptosis. She became pregnant in March, 1900, when all of her symptoms gradually disappeared. After delivery she was given the same care as the other two patients and has made a complete recovery.

Case No. 4. Miss R., age 26, consulted me January 18th, 1901. She complained of fullness after meals and sharp pains, eructations of gas, backache, and bloated sensation in the stomach. She felt weak and tired all the time, slept poorly, lost sixteen pounds, bowels constipated, mucus in stool. An examination proved an enteroptosis. Under rational treatment she improved in weight, so that on May 23rd she weighed 124½ pounds, a gain of eight pounds. She was married the following month, became pregnant and, after delivery, was kept in bed for three weeks with the bandage applied in the usual manner and has remained well ever since.

In conclusion let me say:

1. That the dispensing with the abdominal bandage after pregnancy according to the new method of obstetricians predisposes to enteroptosis.

2. Pregnancy favors and assists the cure of enteroptosis.

3. Patients with enteroptosis need not, on its account, hesitate to be exposed to pregnancy.

4. The disagreeable symptoms of enteroptosis seem to disappear, while the patient is carrying the child.

5. Keeping the patient in bed after delivery and applying an effective band is very helpful in the cure of enteroptosis.

6. Early convalescence after delivery and insufficient support to the abdomen predisposes the patient to enteroptosis.

The Journal of the Michigan State Medical Society

All exchanges, books for review, manuscript, etc., should be addressed to the EDITOR, 57 W. Fort St., Detroit, Mich. All communications relative to advertising, subscriptions, etc., to the BUSINESS MANAGER, 315 Stevens Building, Detroit, Mich.

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Editorial

COUNTY SOCIETIES AND PUBLIC QUESTIONS.

The County Societies in Michigan have exclusive jurisdiction, as the State Society guards them from any rival. This encourages exhaustive study of any question which may come before them. If the question be one of public interest, they can take the time needful to formulate exact statements, and advise the wisest action.

In every county the knowledge and judgment of the medical profession are sought in matters relating to civic life and public health. In the past it has occurred that one society or set of doctors hastily gave one view while another set gave an opposite. In supporting these views the public has been treated to a spectacle as edifying as a scrap of Kilkenny cats and as helpful to the public as a dog fight. As it sells their papers, the newspapers egg on the fight.

With a monopoly of their counties the Branch Societies have no temptation to disagree. Being supreme in their field, they are encouraged to use this to advance the interests of every physician and the public whom all serve—so promoting mutual respect and confidence. Hence, if their judgment on any matter relating to the laity be sought, they will (1) make a thorough study of the same; (2) their judgment will be expressed in terms impossible to be mistaken by the laity.

To accomplish this the question should be referred to an appropriate committee, familiar with the subject, willing to study it exhaustively, and able best to express its conclusions. This committee will usually be the Executive Committee, but it may consist of the President and Secretary, or one especially selected. The make up of the committee is unimportant, if only it fully master the question, and forcefully express the same. This done, there can be no controversy—nothing to mar the confidence of the laity in the profession. The result will be a uniform, up-to-date, teaching of the laity on matters affecting their interest. It will eliminate the possibility of an individual or clique "working" the society for schemes for his or its own interest at the expense of others.

Only thus will the medical profession gain its birthright as a teacher of the people, and command the respect due disciples of science and guardians of health interests. Our Branch Societies have this end within their grasp—if done in each county, it is done in the State. If done in Michigan, it will spread till every county in the United States has seen and risen to its opportunity.

Let us discard—in county societies—superficial examination of public or quasi-public questions, snap diagnosis, haphazard treatment; let us follow our custom in capital operations for which we are held responsible—make the most exhaustive study of the case, and complete preparation of every detail, ere speaking to the public.

LEARTUS CONNOR.

THE MEDICAL SOCIETY HABIT.

So largely is medicine the personal teaching of one doctor by another, that frequent meetings are indispensable to reach the highest standard. It is noted that when one has discovered some new method of operating or treating cases with better results than his fellows, some

of the brighter make pilgrimages to learn the new methods. In this way the excellence of one is scattered to far distant regions. It seems that the mere verbal description of the book, or journal article, fails to tell the entire story.

Others meet in bodies large or small, for comparison of ideas, that each may glean from the other that which he lacks and the other possesses. These may be said to have acquired the society habit. The great mass of the medical profession of Michigan has never acquired this habit.

The organization in Michigan, unfolding with such astonishing results during the past eight months, is an intelligent effort to enable every reputable physician to acquire the medical society habit. It has already planted a medical society in seventy counties, and hopes to include the entire eighty-three in the State ere the annual meeting. Anterior to this at most only fifteen medical societies existed in the State.

As in all organizations the strong will help the weak, so that those who are real or potential members will give the aid the one needs and the others possess. It is quite impossible for any earnest seeker for better equipment to spend an hour in discussing a medical topic with a brother doctor without reward large or small.

Since no little skepticism exists as to the benefit of any medical society, it is for the friends of organization in Michigan to show that the present movement differs from all ever preceding it, to so large a degree as to remove the basis of said skepticism. This calls for a clear knowledge, overflowing enthusiasm, and a determination to enroll the skeptic in the movement—a clear headed educator in this branch of medical sociology.

Indolence or indifference is everywhere. The first is met by the awakening of interest in the broader outlook of the organization, the stimulus of a new hope for better things, the stirring of an ambition to excel. The latter is overcome by showing that indifferent physicians will be outdistanced by neighbors working for, and in a medical society, unless they too cast their lot therein.

It is confidently believed that the Michigan State Society and its Branches offer so much to the individual doctor of high or low degree, that he would join one of its numerous Branches—if only some person make the advantages clear to him.

To teach the "Society Habit" to Michigan's five thousand doctors calls for persistent, tactful, broad minded, unselfish devotion to the best interests of the profession. It is suggested that from this time onward every young doctor be brought into the County Branch as soon as he locates. The older members of the profession are more difficult to reach, but few will prove invulnerable to the attractions now offered to all in Michigan. Let each member join in the work of "gathering them in" heartily as if he were the sole worker—and the thing is done.

LEARTUS CONNOR.

County Society News.

THE NOTTINGHAM BILL.

The following is a copy of a letter sent to the Secretaries of all County Medical Societies of the State. There was also enclosed a copy of reprint on "Present Status of Medical Registration in Michigan:"

DEAR DOCTOR—I am enclosing you a copy of House Bill No. 204, intoduced by Dr. Nottingham, January 30th last, which bill amends the present, or Chandler Medical Act.

These amendments are almost identical to the suggested amendments approved of by the State Society at the Port Huron meeting, June 27, 1902.

Will you kindly bring this bill up at the next meeting of your County Society and have it endorsed and officially instruct the Senator and Representatives of your district to support it in its entirety in the Legislature?

You will understand, of course, that it is an almost impossible matter to frame a bill satisfactory in all its details to everyone, and the bill should be criticised from the standpoint of its general efficiency and raising of the standard in the matter of the regulation of the practice of medicine in this State. The proposed amendments will bring the Michigan Medical Act up to the standards of the better States, and will form a basis upon which reciprocity can be carried into practical effect with all of the leading States in the Union.

In order that the Society's endorsement may be effectual, kindly bring the matter before it at an early date.

Yours very truly,

B. D. HARISON,

Chairman, Committee on Public Policy and Legislation, Michigan State Medical Society.

BAY COUNTY.

PREVENTABLE DEAFNESS.

CHAS. H. BAKER,
Bay City.

There is, hiding in the retired places of the world, withdrawing as much as possible from the notice of their fellow beings, a vast army of people suffering mental tortures equal in degree to the greatest physical suffering that could be endured; sensitive without reason to the supposed gibes and taunts of their fellows, and shutting themselves off from contact, so far as possible, with the rest of the world; they are the victims of an infirmity little thought of by their fellows until themselves attacked—I mean the people who are hopelessly deaf.

No one, not in their condition, can appreciate the anguish of mind endured by these persons, or know the loss, both financial and social, they have to bear. Not only are they deprived of the social intercourse which their fellows enjoy, but they are in constant dangers not experienced by the rest of mankind; dangers both to limb and life from injuries which men with hearing easily escape. To the earning of a livelihood the hearing is scarcely less essential than is sight, and observation of many of these unfortunates impels me to believe the totally blind are, as a rule, far happier than the totally deaf.

These are my reasons for inflicting a paper upon you on a subject which most men would vote a bore—namely, the subject of deafness.

In writing a paper on the subject of deafness I have aimed simply to present some of the more common causes which are often overlooked, and point out the mode of their treatment. Deafness may be defined, if definition is needed, as the more or less complete loss of the differential perception of sound waves.

This loss may occur as the result of obstruction or destruction of some part of the auditory apparatus, and may be congenital or acquired. For purposes of study the hearing mechanism may be divided into: First, the external ear, which comprises all outside the drum membrane; second, the middle ear, comprising the tympanic cavity and its accessory cavities, the eustachian tube and the mastoid cells; third, the internal ear, comprising the cochlea, labyrinth, and semicircular canals; and lastly, the auditory nerve tract back to its cerebral origin.

Anything which interferes with the integrity of any of these parts may impair or prevent hearing, while on the other hand serious destruction may involve parts of these organs without interfering with sound perception very materially.

Causes affecting the auricle only do not often affect the hearing; *e. g.*, the auricle may be entirely removed by accident or design and hearing be not measurably changed, or congenitally, it may be reduced to a mere stub, may be affected with tumors or otherwise mutilated, and the hearing remain normal. Obstruction of the auditory canal, unless very nearly complete, does not often cause total deafness. Obstruction may be caused by a foreign body impacted in the canal, and may be almost any substance. Thus, I have found pebbles, mortar, putty, cerumen, flies, peas, nuts, toothpicks, bugs and beetles, all of which may have been in place months or years.

Non-absorbent substances may remain a long time without causing trouble if the pressure does not irritate the canal and produce ulceration. I have removed a pebble after it had remained in place for twenty years and was completely imbedded in cerumen. Peas, beans, and other absorbing substances, give rise to trouble very soon after their introduction, and, if allowed to swell, are difficult of removal. Most foreign substances are easily removed with the two-ounce syringe of the Pomeroy pattern, if there are spaces, however small, through which the water may find

its way behind the body. Considerable force may be applied to the syringe without injury to the drum or pain to the patient. Valuable instrumental aids to the removal of foreign bodies are Wilde's toothed ear forceps, the spiral ear spoon, and the little, hooked, blunt curette. Should moderate measures fail to secure removal, use chloroform at once and with a good light the removal is usually easily effected. Too vigorous effort, without the help of chloroform, often destroys the drum, as I have seen happen in the hands of really competent physicians, so that caution and tact must always be used.

One of my friends who had the misfortune to tear the drum membrane in the effort to remove a beetle three-quarters of an inch long, with the help of unsuitable forceps, afterwards called my attention to a very practical method which is worthy of trial. It consists in the use of a probe wound with cotton and dipped in collodion, which is applied to the foreign substance until dry, when it can be withdrawn with the offending matter attached.

Impacted cerumen is one of the most common and easily removed causes of deafness. After elevating the lower edge of the wax with the probe to allow the water access to the space next the drum, inject warm water with a two-ounce piston syringe into the canal, which will usually bring the cerumen out in a cast of the canal. A saturated solution of sodii bicarb. used for a day or two beforehand will often materially assist in the removal when the wax is very hard.

Furuncles sometimes obstruct the canal sufficiently to interfere with the hearing, but the hearing promptly comes back with the subsidence of the swelling following evacuation of the pus.

It is sometimes difficult to determine on first examination whether there is anything except a furuncle present, for the pain and swelling are out of all proportion to the gravity of the disorder, owing to the small amount of subcutaneous connective tissue, which interferes with the exudates passing out of the vessels.

With mastoid periostitis pus may point in the canal and be difficult to distinguish from a furuncle until it is incised, but the bone will be found denuded when explored with the probe when periostitis is present, and is not likely to be if the case is simple furuncle.

Obstructive and destructive conditions of the middle ear will next engage our attention.

These are the most common causes of deafness, and so engage the most attention from aural surgeons, and demand the most time and patience in their treatment.

First in order of frequency are catarrhal diseases of the tympanic cavity and eustachian tube. Childhood is the time of commonest occurrence, and the amount of suffering which might be prevented is incalculable. The post-nasal cavities in children are relatively very small and are liable to still further narrowing by swelling and hyperplasia of the glandular tissues so freely distributed in the vault of the pharynx. A slight cold will cause the pharyngeal glands and the mucous membrane lining of the eustachian tubes to swell, and by the swelling and accumulation of mucus the tube is shut up, and as the air contained in the tympanum is absored the atmospheric pressure pushes the drum membrane in upon the wall of the skull, the bones are displaced, pain is at once manifest, and the child is crying with earache.

The drum quickly becomes congested and the lining mucosa of the tympanum participates in the congestion.

If nothing is done the condition speedily passes into acute inflammation. At this stage instant and complete relief will follow the simple expedient of inflating the middle ear with the Politzer air-bag, or in its absence any rubber tube and the physician's lungs may answer equally well.

The tube of a Davidson syringe will answer admirably. Inserting the tube into one nostril tightly and closing the other with the finger, instruct the child to puff up the cheeks; or, if too young, or crying, forcibly drive the air into the closed cavities, when in the majority of cases the eustachian tube will open and the pain will speedily disappear. Sometimes it will be best to drop two or three drops of a 4 per cent. cocaine solution into the nostrils and allow it to run back to the naso-pharynx, where, by its astringent action, the membranes will be shrunken and the eustachian tube rendered more pervious, when the inflation will be comparatively easy. Adrenalin chloride will act still better if there is much inflammation, when used in a 1-2000 solution. If the patient is not seen until active inflammation has begun, and the membrane is bulging, it is better to incise the drum at once than to wait for Nature to make the opening, because the drainage will be better and the opening thus made heals better when the inflammation is arrested.

Spontaneous rupture or incision is usually followed by prompt relief of the pain, and with simple, frequent cleansing the discharge will soon cease.

Many of these patients have repeated attacks, at greater or less intervals of time, and when this occurs an examination should always be made of the naso-pharynx for adenoids. This examination is best made with the finger passed behind the palate, and is done as follows: Embracing the child's head with the left arm and having it open the mouth, with the forefinger of the left hand push the cheek of that side between the teeth, which prevents the most unruly child from biting, for he will not bite himself. Then insert the forefinger of the right hand behind the palate, when, if adenoids are present, they will be felt as a cushiony mass in the pharyngeal vault.

It is not necessary that there should be much obstruction to the breathing for adenoids to be the cause of serious impairment of hearing, and in fact many of the more serious cases have very moderate sized growths.

Unless the vault is clear of the growths, in these relapsing cases, I make it a general rule to remove all vegetations and invariably with benefit to the hearing. The removal is best done with the Gottstein curette, next with the forceps or snare, while in quite recent cases it can be very satisfactorily accomplished with the finger nail. Chloroform allows of a thorough operation being done, and is much less mental shock to the patient. The physical improvement which follows this operation is often astonishing, one mother assuring me her child grew more in the next four months than in the previous two years. Invariably the appetite is improved and steadied, the breathing improved, and sleep become restful and quiet. Nutrition rapidly grows good, the color improves, and the tendency to head colds is overcome.

There is a very large number of cases of deafness in every community, ranging from a very slight lessening to almost total loss of sound perception, occurring in persons usually above the age of twenty, which has been the bane of the aural surgeon.

These are the dry catarrhal cases, or atrophic middle ear cases, and prolonged observation has convinced me that these cases nearly all arise from the neglected cases of adenoids in children. When these persons appear for treatment there is usually no other lesion to be found than a thin and retracted drum membrane, usually accompanied by an atrophied pharyngeal mucous membrane, and the most we can do for them is occasionally to arrest the process of atrophy where it is, if, indeed, we are able to do even so much as this. Our duty then is plainly to do what may be done to prevent the occurrence of this hopeless form of deafness; and this can only be done by extending the knowledge of the cause most widely among the members of the profession, in order that they may be on the lookout for the less marked signs of adenoids, and see that they are operated upon early, before the mischief is done.

Any person can recognize a marked case of adenoids, which has advanced up to the point of marked obstruction to the breathing, but we all need to be more alive to the lesser signs of their presence. The child with fitful appetite; pale, muddy complexion; easily tired; a restless sleeper; subject to frequent head colds; nocturnal eneuresis; constant tendency to clear the throat by "hemming," and possessed by a constant, soft rattling cough, without expectoration, with either or all these symptoms, is a suspicious case at the least, and should be examined for adenoids. If a child is hard of hearing, either when suffering with a head cold or without, an examination ought also to be made with the possible presence of these growths in mind; and if found they ought always to be extirpated without much delay.

Many will prefer to temporize in the hope of shrinking the material away, but this is a hopeless task except you wait so long that serious mischief is done.

Suppuration and perforation of the drum membrane is very common after the exanthems influenza and diphtheria, due, of course, to the direct extension of the throat inflammation to the middle ear via the eustachian tube. The purulent discharge is much more intractable when it arises from these causes than from "colds" or that class of infections.

There is a belief prevalent among the laity—and, indeed, the profession, as well—that suppuration from the auditory canal proceeds from its wall, and not from the tympanum except in rare instances. Nothing could be more untrue, for with the exception of eczema of the canal it always comes through the drum, and the eczema is more often the result than the cause of the pus. The patient's friends are given to dropping into the external canal various oils, liniments, etc., which are not only of no use, but often positively harmful. While the drum is intact nothing is indicated but hot water, as hot as can be borne, in very large quantities—a quart to a gallon at a time, introduced with a fountain syringe, which is to be placed a foot higher than the ear.

The ear must be inflated also in order to blow out the secretions and relieve the pressure upon

the labyrinth, for so long as the external pressure greatly exceeds the internal the pain will continue unabated.

The only drug which I have found to give much relief to the earache is cocaine dissolved in aniline oil. In any other form it is as inert as all the rest of them. The solution is: ℞ cocaine hydrochlorate, gr. 10; aniline oil, m. 100; absolute alcohol, m. 100. Sig., one to two drops in the ear once in three hours.

In young children caution must be used with this formula, as some are quite susceptible to the aniline oil and may show the same collapse as from an overdose of acetanilid.

On account of the frequent occurrence of middle ear disease in the exanthems the throat must receive especial care from the physician during their continuance, and frequent inspections be made of the drums for signs of threatened danger, because the membrane frequently ruptures without preceding pain. The importance of this care will be understood when the fact is noted that over half the deaf mutes in all the asylums are deaf from the above causes.

If there is much exudate in the throat, and especially if the ears show signs of invasion, the nose and throat need frequent spraying with some alkaline and antiseptic wash or the normal salt solution. Care must be used that the patient does not blow the nose while any amount of the fluid remains in the pharynx, as there is danger of doing the very thing which you are seeking to avoid, namely, infect the middle ear.

If in spite of all efforts the membrane ruptures the case must have assiduous atention. The pus must not be allowed to remain very long at a time in contact, but must be cleared several times daily with the help of hydrogen peroxide and irrigation with hot borax solutions.

Secretions require to be blown from the tympanum with the Politzer air bag, and if these things are well and faithfully attended to most cases will promptly recover without any loss of hearing.

A word as to the use of hydrogen peroxide. If dropped into a patent auditory canal with a medicine dropper there is little danger of the rapid evolvement of gas forcing the infected pus into parts of the ear not yet invaded; but if anv amount is injected into the tympanum there is grave danger of this accident happening.

The secret of success in treating suppuration of the middle ear is early attention and efficient cleansing, and so far as possible keeping the canal dry. The patient can easily be instructed in the dry cleansing with absorbent cotton wound on a toothpick, which can be carried in the pocket and used several times daily. These patients require to be seen daily while the discharge is abundant, to prevent possible blocking of the outlet of pus by collection of debris imperfectly removed.

The number of patients going about the world with discharging ears is almost incredible, especially in the light of modern knowledge of the risk to both hearing and life itself from this neglect.

It is a very common experience to have a patient say he has been told by his physician that there is nothing to be feared from a running ear; "just a little wash will soon set things right." No inspection has been made, and the doctor has contented himself with prescribing without so much as a glance at the seat of trouble.

A running ear is a powder mine, liable to explosion at any time, and likely to be as fatal as the mine itself.

Every physician ought to familiarize himself with the normal appearance of the auditory canal and the drum membrane. This requires a good source of light and a head mirror and a little time and care to familiarize himself with their use. The light may be a good kerosene lamp in absence of better facilities, but the best all-around light is the Welsbach gas burner inclosed in a hood.

This preliminary training will save the mistake of confusing hardened cerumen with swelling of the canal or polypus with a foreign body, as I have known to be done, even by good physicians who had been a little careless or jumped at a conclusion without inspection.

Should pus continue to be discharged beyond two or three weeks at the furthest, careful inspection will often reveal a polyp commencing to form, or a boggy state of the inner wall of the tympanum resembling a granulation. This may be touched with a crystal of chromic acid fused on a probe, often bringing a troublesome suppuration to a rapid ending.

Long continued suppuration is caused by one of three conditions—degeneration of the mucous membrane, granulation, or polypus, which are different stages of the same pathological state—caries of the ossicles, or the wall of the tympanum; and third, cholesteatoma, which is a collection of epithelial scales, pus, cholesterin and microbes.

When persistent, intelligent cleansing fails to promptly check aural suppuration, the case should have careful inspection with reference to the pres-

ence of one of the above conditions, removal of which will usually bring the case to a favorable termination. There are other, rarer forms of deafness which I have not mentioned, and I have purposely omitted to speak of the serious complications likely to arise from aural suppuration, as that is a subject too broad to be cramped into the limits of the time at our disposal, and I wish to speak of but one thing more. Deafness is far easier to prevent than to cure. Deafness is the result of processes almost without exception originating in childhood, and mostly easy of control or removal; whence it becomes the duty of every physician to familiarize himself with these causes in order that he may take the necessary steps in time to prevent the changes which will add to the great body of recruits for the vast army of unhappy inefficients—the hopelessly deaf.

INGHAM COUNTY.

A meeting of the Ingham County Medical Society was held at Lansing March 12th. The following is the program of the meeting: 2 p. m., business meeting; 3 p. m., address by Judge R. H. Pierson, "The Relation the Physician Sustains to the Law;" 4 p. m., paper, "Lagrippe," Dr. H. A. Haze. Discussions led by Dr. F. W. Shumway, Williamston; Dr. G. B. Wade, Laingsburg. Presentation of cases.

L. ANNA BALLARD, Secretary.

IONIA COUNTY.

The first regular meeting of the Ionia County Medical Society was held at Ionia, January 8th. The meeting was called to order by President C. S. Cope, M. D., of this city, who welcomed the visiting M. D.'s. A paper on "Vaccine and Vaccination," by C. A. Stanton, M. D., of Belding, and a report of a "Case of Catarrh of the Stomach," by Charles E. Baily, M. D., was the program before dinner. The other numbers on the program were: "Medical Ethics," by C. S. Cope, M. D., President of the Society; "Treatment of Appendicitis," by J. G. Bird, Ionia; "Five Years' Sojourn in the Medical Colleges of London and Edinburgh," R. Logan, M. D., Ionia; "Surgical Treatment of Procidentia," Reuben Peterson, M. D., of Ann Arbor.

Dr. F. W. Braley, of Saranac, was chosen to represent the Society at the next meeting of the State Society. The next meeting of the County Society will be held at Belding, date unannounced.

F. W. BRALEY, Secretary.

LIVINGSTON COUNTY.

The Livingston County Medical Society met in Howell, March 17th. Dr. Aaron Cooper, of Fowlerville, was elected as delegate to the State convention. The following committee on medical legislation was elected: Dr. H. F. Sigler, Dr. J. H. Egbert, Dr. A. S. Austin.

Dr. J. H. Egbert read a paper on "Surgical Anatomy of the Appendix."

R. H. BAIRD, Secretary.

MONTCALM COUNTY.

The following is the program of the meeting of the Montcalm County Medical Society, to be held at Lakeview, April 9th:

10 A. M.

1. Call to order by the President.
2. Clinic.
3. Reading the minutes of the last meeting.
4. Communications.
5. Paper, "Certain Skin Diseases.....
   .....Dr. L. S. Crotser
   Discussion ..Opened by Dr. A. P. Culbertson
6. Report of case .....Dr. W. P. Gamber
7. Paper, "The Earliest Reliable Signs of Pregnancy" .....Dr. R. H. Blaisdell
   Discussion .....Led by Dr. A. L. Corey
8. Paper, "Chronic Nephritis".....
   Dr. George F. Butler, of Alma Sanitarium
9. Paper, "The Therapeutic Uses of Arsenic" .....Dr. N. E. Bachman
   Discussion .....Led by Dr. J. Purden
10. Report of case .....Dr. D. K. Black
11. Paper, "Differential Diagnosis of Certain Pelvic Diseases"..Dr. L. S. Griswold
    Discussion .....Led by Dr. A. W. Nichols
12. Paper, "Diphtheria Diagnosis and Treatment" .....Dr. S. S. Ludlum
    Discussion .....Led by Dr. Josiah Black
13. Paper, "Surgical Emergencies".....
    .....Dr. W. H. Belknap
    Discussion .....Dr. A. E. Savage
14. Miscellaneous business and adjournment.

The officers very properly call the attention of the members to the following resolutions, which were adopted at the annual meeting of the Council in Detroit, Jan. 9, 1903.

1st. Every member of a chartered County Society is a member of the State Society, and the dues to both must accompany his application for membership in his County Society.

2d. Each old member of the State Society must affiliate himself with his County Society, in those counties in which a chartered organization exists, as soon as expedient—not later than Jan. 1, 1904.

It is hoped that every registered physician in good standing will avail himself of the privilege of membership in our County Society.

The membership fee for County and State membership combined is but $3.00 per year, and this, makes one eligible to membership in the American Medical Association.

Let there be a grand rally at this meeting, preparatory to the state meeting to be held in Detroit in June.

Officers—President, John Avery; first vice-president, N. E. Bachman; second vice-president, F. R. Blanchard; third vice-president, G. A. Stanton; fourth vice-president, L. S. Crotser; secretary and treasurer, H. L. Bower.

H. L. Bower, Secretary.

ST. JOSEPH COUNTY.

The St. Joseph County Medical Society met at Centreville, March 10th. On account of bad weather the attendance was not as large as usual. Dr. Blanche Moore Haines, of Three Rivers, read an interesting paper on "The Trained Nurse." The paper caused a general discussion by Drs. Kingsley, Cameron, Haines, Sabin and Long.

Drs. Long and Barnaby presented an interesting surgical case. The patient, a boy, fell against a saw, three-eighths of an inch thick, while the same was in rapid motion; the right arm was amputated at the wrist; there was a deep cut through the frontal and parietal bones seven and a half inches long, profuse hemorrhage following; this was controlled by packing. There has been a free discharge of pus with a pink, watery discharge; the wound is now closed for one-half the length of the cut, but an enlargement the size of one-half an egg appeared. The pulse, at first 70, has fallen day by day until it is now about 45 per minute. This interesting case was informally discussed.

Upon motion the secretary was instructed to correspond with our senators and representatives informing them that this society favored unanimously the Nottingham bill.

The next meeting will be held at White Pigeon, April 14.

PNEUMONIA.

W. A. FERGUSON,
Sturgis.

I well know the many anxious moments that we have all spent with complications of pneumonia, and it is on these complications that I wish to dwell. But before commencing this subject it may be well to consider the philosophy of fever in its abstract sense. Fever is an abnormal condition, made known by an increased temperature, quick pulse, increased respirations and a general waste of tissues, caused by perverted secretions of the body in general. Now, the cause may be idiopathic or traumatic. Keeping these facts in view all the way down the line through the different stages of pneumonia, we are better prepared to give treatment that will be in line with the pathological conditions of each stage of the disease. We well know that the lungs are the organs that feed the body with oxygen and also take from the body the excess of carbondioxide that the blood has gathered from the tissues, and when this function has been interrupted by colds or other causes we see at once the grave injury that may be done to the human system.

In the days of Galen and many others of those times the causes of disease were not dwelt on as much as they are to-day. Biology, chemistry and bacteriology had not been investigated to a certainty in many lines of human economy as they are to-day. But thanks to many of those old heroes for the landmarks they left to the medical and scientific world.

In the history of the different causes of pneumonia we find that sudden changes in the temperature produce this disease more than any other single cause. Lowered vitality, by reason of rickets, Bright's disease or bad hygienic surroundings may all be factors in bringing this disease to its full development. The exciting cause is now supposed to be the presence of pneumococci or diplococci. These germs as an identity in the exciting cause of disease are, comparatively speaking, of recent discovery. The time may come when the medical fraternity will have a mastery over these germs and know just what

to do to expel them from the human system. Among predisposing causes we may have measles, whooping cough, scarlet fever, influenza, bronchitis. Each attack of this disease makes the patient more susceptible to following attacks, and therefore it is our duty as physicians to warn them of this fact. Seasons of the year seem to have more effect on this disease than climate.

Etiology.—From a clinical standpoint, lobar pneumonia is an infectious, self-limited disease, generally characterized by three principal stages: First, stage of engorgement; second, stage of red hepatization; third, gray hepatization, with liquefaction and resolution by absorption and expectoration, or solidification and death. Many times we are at a loss to know why our patients pass from the acute stage to the chronic form, and linger along for many weeks, apparently between life and death. By careful investigation of the pathology of pneumonia we find that the lining of the air cells undergoes a marked change while passing from the stage of red hepatization to the stage of gray hepatization. In the earlier stages of the disease we have an excess of fibrinous matter mixed with a small percentage of blood in the air cells of the lung, but as the disease continues from the second to the third stage this matter forms a granular character, due to fat-drops in the interior of the cell. Now, if these molecules of fat completely emulsify with the fibrin and mucus in the cell we get liquefaction, and absorption will generally follow, with resolution as a result. But if this process does not take place, the cells will atropy to a certain extent and many cases will go into a chronic state; and thus we get a reason for chronic pneumonia. There may be other conditions that would contribute to chronic pneumonia, but they are not the principal causes from the fact that chronic pneumonia never takes place until these pathological changes take place within the cells of the lung that I have mentioned. When we stop and realize the fact that the blood on the one hand must receive all the products of digestion, and on the other hand must dispose of all the waste products of the tissues from the lymphatic system, and that the lungs are the principal organs by which the blood can complete this process, we can readily see the gravity of pneumonia in its many forms.

Pathology.—I do not know that I shall be able to add one single ray of light on this part of the subject to this society of professional men. The stage of engorgement is known as the first stage of this disease. In this stage we find the pulmonary vessels very full. The tissue is of purple tint, is heavier than natural, and has lost some of its elasticity; on cutting into the lung we get a bloody serum, that becomes frothy when mixed with air, due to the surplus of carbon in the blood cells. The microscope shows a dilated condition of the capillaries of the pulmonary artery and a dilatation of the air cells of the lungs. At this stage of the disease we do not get much development of the physical signs that will come in the stages of red and gray hepatization, and at this point permit me to say that in my earlier practice I have misdiagnosed my case by being in too great haste and not waiting for the physical signs to become more developed. The question often arises in my mind whether the lung gets its principal nutrition from the pulmonary artery more than from the bronchial capillaries or not. At present I am inclined to believe that the pulmonary artery furnishes the major part of nutrition to the lungs, from the fact that it is the gateway by which the blood gets back to the general system through the left heart.

Red Hepatization.—In this stage the torn surface of the lung has a granular appearance called by many writers the nutmeg lung. In this state the bronchial vessels are distinct and may be filled with exudated matter. Also the lung tissue is very heavy, sometimes being one-ninth heavier than the natural lung. The lung is expanded to its full extent. The exudation in this stage is largely composed of coagulated fibrin with red and white blood corpuscles intermixed. If the inflammatory process of this stage reaches the surface of the lung the plura invariably becomes involved and is covered with a fibrous exudation. After a few days the color begins to change to a grayish caste, due to an increase in the leucocytes of the blood. With this change of color we notice a loss of solidity of the affected tissue and the exudation begins to liquefy, if the process is not hindered by other causes. The second and third stages are so blended together that it is difficult to know just when the second stage ends and the third stage begins.

Gray Hepatization.—In this stage the tissue has lost its firmness and also its previous color. The tissue is soft and pulpy, and a dirty gray fluid escapes under pressure or by scraping the tissue. Where pneumonia has been secondary to some other disease we may find different conditions in the tissues. For instance, I held a post mortem on a case that had Bright's disease previous to his attack of pneumonia, and in this

case the tissue was uniform, smooth and glistening. Now, by looking up the pathology of Bright's disease we find that its evil effects are on the kidneys, arteries and heart, and the arteries are many times calcified and their walls become thickened. This condition would prevent the natural order of process in the stage of gray hepatization of the lung. Applied pathology of other diseases many times gives a solution to some of the unnatural order of things in pneumonia in its various complications. Pus cells are present in all pneumonia processes, and sometimes the lung suppurates. In this stage the lung presents a yellower appearance, and the granular character is not present; but pathologists of to-day look upon this condition as one of degree in the softening process and not of composition in the matter exudated. During the stage of resolution the cell forms have degenerated and broken down, and are disposed of by absorption and expectoration. With children and infants the process is by absorption, and with adults both processes take place. There is one more point that I wish to notice, and that is: If we use the acetic acid test with the fluid from the stage of engorgement, and then use the same test with the fluid from the stage of gray hepatization, we will get the same result. This shows that the composition is about the same, and that the different characters of the exudate are produced by the inflammatory process of each stage of the disease.

Site of the Disease.—My experience on this point has been in lobar form—first, left base; second, right apex; third, in double form lower lobe of both lungs; fourth, upper lobe of both lungs. I have had but very few cases where the middle lobe of the right lung was affected, and when this occurs it is generally due to pericarditis, endocarditis, or heart trouble of other forms. Double pneumonia is not a common occurrence unless it has complications such as broncho-pneumonia. The passing from one stage to another has no regularity of time. The diathesis of each case is the controlling factor in the evolution of the different stages. A lung may remain in the stage of red hepatization from three to seven days, but the natural order of things is from two to three days for each stage. We must bear in mind that in the stage of engorgement 24 to 36 hours may elapse before the physical signs develop, and we have nothing but the history and symptoms to guide us in our diagnosis. There is one question that I have not settled in my own mind, and that is if the exciting cause is the presence of pneumococci in the blood how is it in the cases that immediately follow a severe injury of the lung?—and many cases are on record where this has occurred and the disease went through the different stages the same as where the cause was idiopathic.

Diagnosis.—In many typical cases the diagnosis seems free from any obscure points, and we arrive at a conclusion without any trouble. For instance, Mr. A. calls and says he wishes me to come and see his wife; says that she had a chill in the night, and is now burning up with a high fever. I call and find his statements to be true. By inspection I find a hurried breathing with perhaps a temperature of 103° by the thermometer and 25 or more respirations per minute. I find a creamy coated tongue with perhaps some irritation of the stomach; also I notice that one particular position is chosen to lie in, and when I ask the reason of this the answer is invariably, "Doctor, I cannot breathe so well when I lie on the other side." I begin to have my suspicions as to what is the trouble, but by inspection I continue my investigation, and find that my patient cannot take a full inspiration without coughing, and in many cases an increase of pain. On percussion in the early part of the disease there may be tympany due to a lack of pulmonary tension, and this is what I generally get if I see the patient within a few hours of the onset of the disease. But to return to my case, I ask the lady to take as long a breath as she can, and while she does this I place the palms of my hands gently over each lung and watch the movements of the lung through the act of expiration; and if I feel a tremulous movement as the air passes out of the lung I note whether it is in both lungs or one. If this tremulous movement is plain there is more evidence of inflammation of the vesicular walls, and the trembling movement is caused by these walls adhering as the air passes in and out. At this point if we carefully auscultate the lung we will get the fine crepitant rale that is produced by this sticking of the walls. The next morning I call to see Mr. A.'s wife and find her temperature is 104°. Respirations have increased to perhaps 26 or more. Pulse may be 120 per minute, full and hard. The physical signs begin to be developed, and we get some dullness on percussion over base of left lung, also vocal resonance is now heard, and many times vocal fremitus may be discovered by placing the hand over the affected lobe of the lung. The patient at this stage of the disease is more indifferent as to what occurs, yet there is clearness of mind. On the third morn-

ing I find my patient about the same as previous morning, only perhaps some weaker and also some changes in the physical signs. The vocal fremitus has somewhat increased and dullness on percussion is now very plain. These symptoms as a whole justify the conclusion that I have a plain case of pneumonia. On the fourth morning I find my patient with but little change in temperature, and the general symptoms are about the same as on preivous morning, only perhaps some weaker; but in the physical signs there have been some changes. The harsh breathing through the bronchial tubes is becoming less, and this suggests the possible fact that the lungs are better able to receive more air. Also now the expectoration may commence to change from its previous character; also at this stage of the disease we find the urine heavily charged with urea, sometimes one ounce being passed in one day; and this occurring while the person is taking but little food would be proof that there is great waste of tissue at this stage of the disease, and tells us to get ready for the crisis that we must meet in a short time. The closer we keep ourselves associated with the morbid anatomy of this disease the nearer our treatment will be on a line of scientific principles. On the fifth morning I call to see Mrs. A., and find a great change in symptoms and signs. The temperature is 100°, the respirations are 20 per minute, the rales are not harsh, the pulse may not be over 80 per minute and not full and wiry. The coating on the tongue begins to moisten and become lighter in color. The expectoration becomes lighter in color and more liquid in consistency, due to the softening process that has taken place in the exudated matter of the air vesicles of the lung The pain that has been prominent in the axilla is less, the difficult breathing is better, and the general inference drawn is that the crisis of the disease has commenced with gray hepatization and resolution in partnership, and I will chance my reputation in diagnosing case A as one of lobar pneumonia. But all cases do not come to us in such typical forms. Many are covered over with other symptoms that many times mislead us in our diagnosis and treatment, and we see our mistake later on, but have lost our best opportunities in giving treatment to our patient.

We will use Mr. B. to represent one of the many obscure cases that come to us in our every-day practice. Mr. B. calls and wishes to have a doctor come at once to see his child that is eight months old. On arriving we find the child in spasms, also find that these spasms followed a long vomiting spell, and that the child is in a lost state between the spasms; find also considerable diarrhea, with a furred tongue that is red at the tip and edges. The breathing is hurried and there is great heat of skin with temperature of 101½° and perhaps a pulse of 130 per minute. If the child be at breast the hurried breathing prevents the child from nursing, and a moaning cry may follow the effort to nurse. On ausculating there may be very fine crepitant rales heard at the end of inspiration, but prominent physical signs have not yet developed. The inspiration is short and the expiration long. On getting a history of this case we find that the child has never been strong; that the mother is from a consumptive family. On arriving on second morning no great difference is found in the general symptoms or signs, except the child is getting weaker and may refuse to nurse. On third morning some new features may develop. We may find bronchial breathing the leading feature. Possibly a little dullness over base of both lungs, but the vomiting has stopped and the child is in a state of apathy. On fourth morning the temperature may reach 103½° and pulse may be 140 per minute, and marked dullness may be present over affected part of lungs. The respiration may be hurried and labored. The child nurses but little if any. On fifth morning no marked change has taken place except that the child is getting weaker and there is increased resonance over healthy part of the lungs. On sixth morning we have a repetition of previous day, with some new signs on the bulletin board. The child selects a certain position to lie in and does not want to be changed from this position; also changing position of child gives different physical signs as to points of dullness. This leads to the inference that there might possibly be an effusion in the pleural cavity, yet there is no bulging of the chest walls; also we may get at this stage of this case a deathly pallor, with cold hands and feet, due to cardiac failure, or we may have the cyanotic appearance of the lips and fingers, due to respiratory failure of the lungs, which would impede venous circulation. On seventh morning we find the child with temperature 100° and the respiration very weak, and the pulse hardly perceptible, and the cyanotic appearance more complete, showing that the venous blood barely passes from the right ventricle of the heart to the lung. This condition of the lung might produce dilatation of the right ventricle of the heart, and in many cases that

have recovered from pneumonia this has been the case. On eighth morning we find the child passing away from exhaustion. Now, what was the matter with this child? Did it have pneumonia? — meningitis? — broncho-pneumonia? — pleuro-pneumonia? — cerebro-spinal meningitis? —empvema? — emphysema? These are some of the stern realities that we meet in our all-around practice of medicine. The difficulty in this class of cases is that we are led astray by the early local symptoms that predominate while the physical signs are dormant, and therefore we have no fair chance to diagnose our case to a certainty at the beginning of this disease.

But we will try and diagnose this case by the plan of comparison in symptoms and signs. We will first compare this case with meningitis. In meningitis we have delirium, in this case we had delirium; in meningitis we have slow respirations, in this case rapid respirations; in meningitis we have a medium, interrupted pulse, in this case we have quick, full pulse; in meningitis we generally have constipation, in this case we had diarrhea; in meningitis we have high temperature, in this case we had high temperature; in meningitis we may have strabismus, in this case none; in meningitis we may have tenderness along the spinal column, in this case none. From this comparison we will take chances in throwing out meningitis in its acute form, though it may be simulated during the course of pneumonia.

We will next compare the case with broncho-pneumonia. In this comparison our difficulty may be greater than with meningitis, from the fact that they are more blended together in their character. In this case we had vomiting spasms, and tongue coated, with red edges and tip; in broncho-pneumonia we have all these symptoms and signs at the beginning of the disease. Broncho-pneumonia also generally attacks the weak children under two years. This case was of this character. In this case there was consolidation of the lower lobe of both lungs. This would be unusual in broncho-pneumonia, as the products of inflammation are diffuse and may be found in different parts of both lungs; in this case no typical course was marked. The same may be said of broncho-pneumonia. In this case consolidation was late, the same may be said of broncho-pneumonia. In this case resoluiton did not take place; of course in broncho-pneumonia resolution many times occurs, yet the hospital records show a heavy mortality in this form of the disease. For the present we will not throw out broncho-pneumonia in this case, but by comparison will notice the early symptoms of vomiting and diarrhea with gastroenteritis. In this case there was no constant cramping of the bowels; there was no great thirst; there was no mucus discharge with a terrible odor; there were no great and sudden expulsions of gas; hence we will take chances in throwing out gastroenteritis in this case. Empyema will not be on the list. In empyema there is flatness over the whole lower half of both lungs and no rales are heard. This would be enough to exclude empyema, though this case is one in which empyema might be accepted for unresolved pneumonia, as resolution did not take place in this case. The next disease is pleurisy. In this disease we often have the purulent form, secondary to pneumonia. In this case, if you remember, on sixth morning the child selected its position and did not submit to changes at that stage of the disease. As I have said before, an effusion might have commenced, but the child did not live long enough to develop the pneumonia that had commenced. Now, in conclusion, I must aggregate my symptoms and signs in case 2 and draw my conclusions as to what is the matter. I will take chances in diagnosing it broncho-pneumonia of lower lobes of both lungs. If we make our diagnosis correct we have already found part of our treatment, and when we conform ourselves to this position in medicine, and feel the responsibility of our diagnosis, we will soon be treating diseases upon scientific principles, and not by routine.

I well remember when I was about 10 or 12 years old of my father sending for the doctor to come and see me, as I was sick with malarial fever. When the doctor came he looked me over and then commenced to dish out the medicine as though I was some rendering machine. After he had finished he told mother that she should give No. 1 so many times, and if that did not vomit me then to give No. 2 so many times, and if that did not vomit me to give me so much mustard in warm water. My hair began to raise; I was scared, and I said to the doctor, "I feel lots better." I thought if I could fool the old man he might divide the bill of fare, and that would take a great load off from my stomach. This doctor meant all right; he was an honest old soul; but he was not living in the twentieth century. He wanted to cleanse my stomach. The end he was seeking was all right, but the means he used were what bothered me.

In closing on the subject of diagnosing pneumonia, we cannot be too careful in our process; we should go slowly and carefully; note every physical sign and symptom that we get;

compare these with similar symptoms and signs of other diseases; get a complete history of every case; note the vital force and also the sanitary surroundings of each patient, and when we do these things we have paved the way to draw fair conclusions as to what is the disease of our patients.

Prognosis.—The prognosis of pneumonia in its various forms depends much on the conditions of each patient, and the surroundings, habits, and so forth; but as we cannot give each case its individual prognosis, we must get the aggregate prognosis from clinical reports in the different forms of this disease.

Lobar Pneumonia.—In this form with the adult, or child over three years old, there is but little danger to life. But if there be complications uniting with lobar-pneumonia then the outcome may be very grave. Also if lobar-pneumonia be secondary to measles or scarlet fever or any other contagious disease, the prognosis is unfavorable and a large percentage of such cases are fatal. It always gives me a great deal of anxiety when I get a case of pneumonia following measles or scarlet fever, from the fact that invariablv I have to meet the disease in the form of broncho-pneumonia, which is quite fatal among children. Early convulsions do not imply necessarily a bad prognosis, and I would much rather see them in the first stage of the disease than in the third stage, from the fact that in the first stage they would be largely neurotic, while in the third stage they might mean exhaustion, toxemia, or the commencement of meningitis. Again, age of patient is a strong factor in fixing the gravity of the prognosis in this disease. The two extremes of life are far more fatal than the intermediate stages; also the prognosis of these cases is bad with the hard drinker; also a temperature above 105 degrees for several days adds to the gravity of the disease. Irregularity of pulse and respiration also are unfavorable symptoms, especially in third stage. Muttering delirium, cyanosis, rapid breathing, are all bad symptoms. Then the general conclusion on the prognosis of pneumonia might be as follows: In lobar-pneumonia, with patients in previous good health, the prognosis is good; in secondary pneumonia with other complications the prognosis is bad.

Treatment.—First. The sanitary surroundings are the first thing that should occupy our attention, for in the regulating of these things lies the groundwork of our success in the treatment of pneumonia in its various forms. We must not lose sight of the fact that it is a self-limited disease; that all we can do is to watch the points of danger, as each case will suggest. Remember that it is not a name that we are treating, but the patient. Each case is a law unto itself, and no two cases can have the same precise line of treatment, from the fact that no two patients will have the same precise line of conditions; and when we realize these truths and act on them, then will we commence to treat diseases from scientific principles, and not by routine, as in days gone by. First, notice the room that our patient occupies; notice the size and location; notice whether it is a room where good ventilation and sunlight can be had, or whether it is a small room back in some dismal part of the house, where we many times find our patient. Good sunlight and good ventilation are two of our best remedies in pneumonia. Next, we should notice the cleanliness of the family, the amount of filth that we must contend with, or if fortune favors us with neatness and order how often we say to ourselves, "Well, thank the Lord I am in luck with this case!" Then, in view of these facts, select a south or southwest room, where plenty of sunlight may be had, and good ventilation. The next thing down the line of treatment is, perhaps, the manner of feeding our patient. This must not be lost sight of in this disease, for remember we have here a disease that produces a large amount of tissue waste from poisoned blood, and the best means in our hands to modify this process is in careful feeding. We must remember that the bile acids in infancy are deficient, and that this acid, with the aid of the pancreatic juice, is what emulsifies the fat in milk. Cow's milk contains more fat than the mother's milk, and when we are feeding milk to our infant patients in this disease we must keep all these physical facts in view, and hence we must dilute cow's milk at least one-half with boiled water in order to reduce the percentage of fat in each feeding. I do not believe in feeding too often; once in four hours is often enough; if we feed oftener than this there may be an irritation set up, and we lose the object that is sought, namely, strength of our patient. Many times we gain in the assimilation of milk by adding a little lime water to each feeding, or a little pepsin and bicarbonate of soda, or liquid peptones with beef juice. Each case will suggest the method to be taken. But by all means we should feed our patients as best we can in this disease from start to finish.

In going back to the philosophy of fever that I mentioned in the first part of this paper, there are some facts that may lead us to certain

lines of treatment in this disease. First, fever is made known by perverted secretions of the body in general; or, in other words, fever is fever by virtue of blood toxines that affect the natural fuctions of the several organs of the body. Now, the principal outlets for the poisons that accumulate in the body are the lungs, the bowels, the skin and the kidneys; and by the presence of these blood toxins the functions of these organs have been changed to an unnatural process of secretion and excretion. Then, if this be true, let us associate hydrotherapy with these pathological conditions, and see if we do not have good reasons for taking this plan of treatment; and the skin being one of the safety valves, so to speak, of the body, we will notice the effect of its being bathed. In the onset of this disease I commence with sponge baths in the order of No. 1 with temperature at perhaps 80 degrees, then follow immediately with No. 2 with temperature at 60 or lower, as I think the case will best bear. This can be done at 6 a. m. and at 6 p. m., and must be done under the cover, where the body cannot come in contact withcold air. After the bath the body should be wiped dry, and the chest wrapped with a single layer of soft cotton and covered with an oilsilk jacket. These baths should be given until the disease reaches its crisis. I have been more pleased with my baths in reducing temperature than with drug sedatives, and also pleased that I was not robbing Peter to pay Paul; or in other words, I did not have to make my patient weaker in order to reduce the fever. The philosophy of sedatives is that they paralyze to a certain extent the motor fibers of the coast of the arteries and lessen contraction of their walls, and hence lower the circulation but in no wise remove the cause; while with the baths the pores of the skin are kept open and hence the gateway is made for the toxins of the blood to pass off, and the cause is slowly being removed. The next question is the cold packs. Among some of our best writers there are different views as to the continuance of these packs. I have used them only in local points, and must say that I have had good results wherever they did not disturb the patient too much and were not continued too long. I do not believe in keeping an ice temperature next to the skin for too long a time in this disease, first for the reason that it may produce a shock to the system, and especially if the patient be very weak; second, continued cold at an ice temperature next to the skin causes a contraction of the capillary vessels, and this is not the physical condition desired in this disease. What we want in pneumonia is a reasonably cool skin with a moist surface. This can be gotten best with the sponge baths, followed by light cotton covering with oilskin jacket over cotton. This process causes to a certain extent a reaction on the part of the skin in performing its functions and it is in this process that the skin excretes the toxins of the blood to a certain extent. Hence it is for these several reasons that I prefer the sponge baths to the ice pack in the treatment of pneumonia.

Next to consider are the bowels. If in the onset the tongue is covered with a creamy coat, I generally give one-tenth grain of calomel with bicarbonate of soda every hour until an action is produced. After this the bowels must be watched from a tentative standpoint. The brain may be involved in this disease, and when this is the case, and especially if it be prominent during the stage of red hepatization, then keep cold to the head and heat to the feet, and give internal stimulants as the case may suggest. But where we are tried to the extent of our ability is in tidinig our patient through the stage of red hepatization; for remember that the best strength of our patient is spent and gone when they reach this stage of the disease. It is at this stage that the cardiac muscles have spent their best force; also the muscles of respiration are weak, and it seems as if the patient had nothing left for us to work with. If we keep in view this philosophy, that the more strength our patients had when this stage began, the better equipped they are to resist the prostrating effect of this stage of the disease, and the more we have labored to maintain the strength of our patient from the commencement of the disease the better are the patients' chances when they come to this stage; and hence strength should be our watch word from first to last in treating this disease, and we should do nothing that would serve to take any strength from our patient to any extent. If there be signs of collapse from heart failure, then we may use strychnia and digitalis, generally by hypodermic injections; or if there be signs of respiratory weakness we may use nitroglycerine, oxygen, etc., and in both cases use stimulants in some form, generally good brandy. In regard to drugs, when the baths fail to reduce the temperature, then sedatives, such as veratrum and others may be used in connection with the bathing; also carbonate of ammonia and aromatic spirits of ammonia may be used internally with brandy as stimulants through the critical period of pneumonia. There are many more things to say in regard to treatment

on the complications of pneumonia, but as that is not my subject I will close by saying that first, last, and all the time, keep your eye on the strength of your patient.

J. R. WILLIAMS, Secretary.

WAYNE COUNTY.

FEBRUARY PROGRAM.

GENERAL MEETINGS.

"Is the General Practitioner Fairly Paid?" by Dr. A. N. Collins.

"Non-Ethical Ethics," by Dr. D. S. Walmsley.

"The Physician as a Witness," by Mr. Samuel T. Douglas, member Detroit Board of Health.

"Medical Malpractice," by Dr. Wm. T. Lane.

"Starvation as a Therapeutic Agent," by Dr. Chas. Douglas.

"Cutaneous Manifestations of Syphilis," by Dr. A. E. Carrier.

"Syphilis of the Nervous System," by Dr. J. J. Marker.

SECTIONS.

"Gastro-Enterostomy, with Special Reference to the McGraw Elastic Ligature," (demonstrations and exhibition of specimens), by Dr. S. E. Sanderson.

"The Heart In Tuberculosis," by Dr. H. B. Baker.

SYMPOSIUM ON ALBUMINURIA OF PREGNANCY.

"Etiology, Pathology and Symptomatology," by Dr. H. W. Longyear.

"Eclampsia and Its Relations to Albuminuria," by Dr. J. H. Carstens.

"Gravidic Retinitis, With Illustrations," by Dr. Fleming Carrow, of Ann Arbor.

"Treatment," by Dr. C. G. Jennings.

"Neurasthenic Asthenopia," by Dr. L. J. Goux.

"The Enlarged Middle Turbinate," by Dr. S. G. Miner.

The Committee on Constitution and By-Laws made a report on March 5. Its chief recommendations were that nominations should be made two weeks prior to election; that elections should be by ballot, a poll being opened for that purpose; that a plurality, instead of a majority, should elect; that the election be on the last Thursday in May, instead of the first Thursday in October; that the fiscal year begin on the first Thursday in September, instead of October; that the annual dues be raised to five dollars. A short history of the medical societies of the county was compiled, showing that this Society has practically existed since 1819.

The Committee on Finance reported that it has raised two hundred dollars and one hundred and seventy-five dollars pledged. The committee having originally intended to raise eight hundred dollars, and having failed to do so, requested that it be discharged.

All money subscribed was voted to be returned, and a special assessment of one dollar was levied.

The Committee on Legislation reported in favor of the Nottingham bill which is before the Legislature.

"IS THE GENERAL PRACTITIONER FAIRLY PAID? IF NOT, WHY NOT?"

Extract of Paper by A. N. Collins.

The author believes the fault lies with the general practitioner himself. The lawyer demands a retainer's fee. Why should the physician not do likewise? His services are indispensable to the public, and still such magnanimity is unparalleled. The different grades in the profession may be catalogued as not paid, underpaid, paid, well paid, and highway robbery classes.

If a man is qualified to do special work he is entitled to better compensation than is he who is not so qualified. But to-day the latter class of practitioners is being eliminated, and in his place are men who are capable of doing good work. Then why should those equally qualified not receive just fees? The fault lies in the general practitioner. His chief blunders are that he fails to make a sufficient charge for the services rendered, and he neglects the enforcement of cash payments. The author's remedy is to start in by "charging a fair fee for your work, by advising your neighbor to do the same, by making a new system of dealing with your patients wherever you have been lax, all along the line; by supporting each other, instead of trying to build yourselves up at your neighbor's expense."

One of the abuses to be corrected by the general practitioner in order that his income may be increased is the infringement of his rights by the specialist. If a man proclaims his special field and expects to receive the support of the general practitioner, that man should confine his labor to that specialty. Life insurance examination is, the author says, one of the greatest abuses indulged in by the specialist. If such work does not belong to the general practitioner, what does? It rests with the general practitioner himself whether he will be fairly paid, independent and respected, or whether he will be a sort of high-toned beggar among men. Ask more and ye shall receive more; demand more and more shall be given unto you.

*GASTRO-ENTEROSTOMY, WITH SPECIAL REFERENCE TO THE McGRAW ELASTIC LIGATURE.

S. EDWARD SANDERSON,
Detroit.

Gastro-enterostomy is an operation for the establishment of an anastomotic opening between the stomach and the intestine. Depending upon the portion of intestine selected, it is called gastro- duodenostomy, gastro-jejunostomy, gastro-ileostomy, etc. It is used in conditions where an obstruction occurs to the normal flow of gastric contents from the stomach into the intestine. Such conditions may be either benign or malignant. Of late it has been employed by some surgeons for the relief of gastroptosis. (*Vide* article by Dr. H. O. Walker in the *Journal of the American Medical Association,* Jan. 17, 1903.)

The first recorded case which I have found in the literature was done in 1881 by Dr. Anton Wolfler in Vienna. The report of the case is to be found in *Centralblatt fur Chirurgie,* Nov. 12, 1881, and cited by Ashhurst in his Encyclopedia of Surgery published in 1884. Bilroth is spoken of by Ashhurst as having been the second to attempt the operation. The first operation was devised upon the spur of the moment in a case of cancer of the pylorus which at the time of operation proved to be impossible of removal. An incision was made in the greater curvature of the stomach and one in the small intestine as near the beginning of the jejunum as possible. The margins of the opening were sewed together, strict antiseptic precautions being used throughout, "except the spray." The wound healed by first intention; there was no rise of temperature and the patient showed marked improvement in his condition. Bilroth's case was also one of inoperable cancer of the pylorus. The operation was done in just the same way, under just as favorable conditions. The operation lasted only an hour; yet following the operation the patient was seized with biliary vomiting and died on the tenth day.

Many methods for performing the operation have been devised, some operators designing mechanical devices as aids, such as the Murphy button, Laplace forceps, Senn decalcified bone plate, the bobbin made of potato or sugar used by several operators, and the elastic ligature method of McGraw, while the operation has been done many times with no mechanical aid whatever, as in the case of Wolfler already cited. The Connell suture has been successfully used. Of all the mechanical devices used the Murphy button seems to have met with the greatest favor in the hands of the most operators. It has the advantage of easy use with rapidity and thorough efficiency. But it has the decided disadvantage of being an unabsorbable foreign body, and of having the added disadvantage of not always being expelled in the feces, but of falling back into the stomach and remaining there indefinitely. For the latter reason Murphy devised a special oblong button which he has claimed is not subject to that objection.

McGraw began his experiments in 1889, 1890 and 1891, at first attempting to get an instrument that would fulfill all requirements. Quoting from his own words, he says in an article published in the New York Medical Journal for January 26, 1901: "My ingenuity was not equal to the task which I had undertaken, but I nevertheless hit upon a method of making intestinal anastomosis which is unequalled in the rapidity of its execution, its efficiency and its safety, although it does not accomplish its purpose until after the lapse of two or three days. This method is by the application of an elastic ligature binding the two viscera together and ultimately cutting its way through. I made many experiments on dogs and two on the human subject, when I was diverted from the method of my own invention by that ingenious device which has made the name of Murphy famous all over the world." * * * *

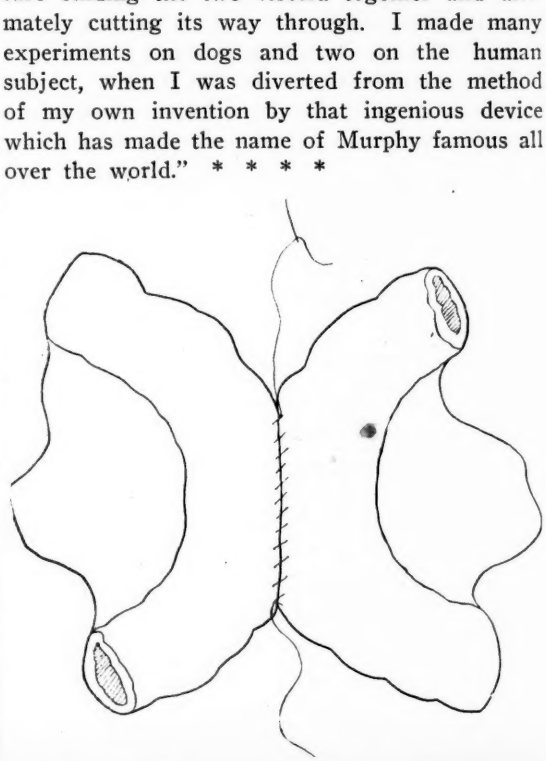

Fig. I. (Semi-diagramatic). First step. Running suture of silk uniting serous surfaces. (*From drawing by Author.*)

*Read before the Surgical Section, Wayne County Medical Society, February 2, 1903.

The steps of the operation are as follows:

(1) Opening of the abdomen.

(2) The selection of the point (a) in the stomach and (b) in the intestine for the junction.

(3) The first running suture of silk uniting the two serous surfaces.

(4) The passing and tying of the elastic ligature.

(5) Completing the running suture of silk.

(6) Closing the abdomen.

The abdomen was opened by McGraw in his first cases as follows: An incision beginning an inch and a half above the umbilicus in the median line was carried transversely to the left about four inches. This severed the left rectus muscle and made the chances of hernia greater, but gave most easy access to the stomach. Later McGraw has used the median incision, which answers every purpose.

The portion of the stomach to be selected was formerly the anterior wall, which in some cases, on account of the sagging of the intestine and consequent obstruction, produced regurgitation of bile and bowel contents into the stomach. Later the posterior wall was selected and was reached through a slit in the mesocolon. I believe, however, the later operators choose the anterior wall and, with improved methods, find it very satisfactory. The point in the intestine to be chosen should be the jejunum as near the duodenum as practical. This is very important in order that the largest amount of intestine may be in the food circulation. Should the lower end of the ileum be chosen instead, death would surely follow from starvation, as the food would pass directly from the stomach into the large intestine. This point is not always easy to find, but can surely be located if the following method be adopted: The transverse colon is drawn out of the abdomen, and its mesocolon put upon the stretch, when if the finger be passed down from left to right, intestine will be found passing under the ligament of Treitz, which is jejunum at its beginning. Another point of importance is to have the peristaltic motion of both stomach and intestine in the same direction. For that reason it is necessary that a turn be made in the intestine.

Having selected the two points of approximation the assistant should hold the two viscera with serous surfaces approximated in a line parallel to the exact point where the opening is to be made and a running suture of silk is placed to firmly unite them for a distance of fully two inches. This suture should be secured at the beginning by a knot, and also at other points, to prevent purse string contraction. In the intestine it should be as near the mesentery as possible. The two loose ends can now be held with forceps while the next step is taken.

Again I will quote from McGraw's article above mentioned: "A rubber cord two millimeters in diameter, ordinarily used for the ligature of piles, is to be preferred to all others on account of its smoothness, elasticity, and great tenacity. * * It may be drawn through the eye of a so-called worsted needle * * smaller than itself. This is a decided advantage, for the reason that it is important to make as small a hole as possible through the intestinal wall, and also to have the ligature not only to completely fill, but even to distend the hole so as to prevent any extravasation of feculunt fluid. Now, by stretching the rubber during its passage and rendering it thin and small, it may easily be drawn after the needle, and its subsequent contraction will then largely increase its size and cause it to more than fill the orifice." The selection of the ligature is very important, as it is the one all-important feature in the operation; McGraw experimented upon a number of different kinds and sizes of ligature before he finally chose the one spoken of above. At first he cut the ligature into the lengths he wished and then shaved the end to a fine tapering point for insertion into the needle. However, there is a ligature manufactured by a firm in this city which answers every purpose, being thoroughly tested before being sold, and is made with tapering ends. This ligature can be thoroughly sterilized by boiling without being

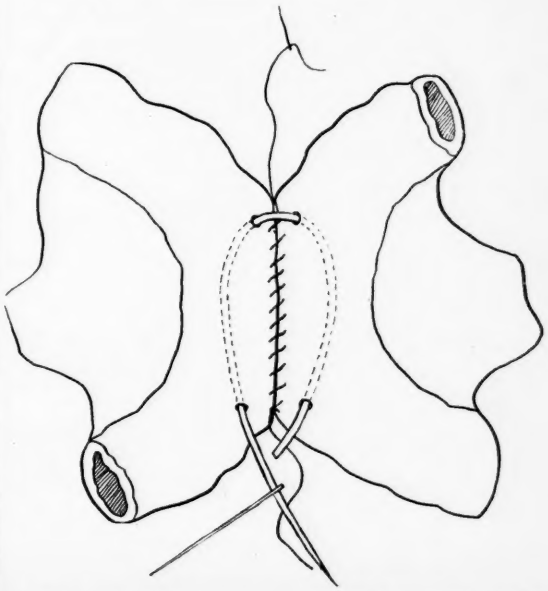

Fig. 2. (Semi-diagramatic). Second step. Elastic ligature introduced, ready to tie. (*From drawing by Author.*)

impaired. It does, however, deteriorate with age so as to become entirely useless for the purpose desired. A cambric needle armed with six inches or more of the ligature is now passed through into the lumen of the gut in its long axis at a point farthest from the mesenteric attachment and out again so as to include about two or two and a half inches. It is then passed on through into the cavity of the stomach and made to emerge just opposite the point of entrance in the intestine. The two ends are then brought together and tied in a square knot with the additional security of a silk suture tied around the ligature to prevent its becoming untied. McGraw now makes only the first tie in the square knot, securing it with a firm surrounding tie of silk ligature, advocating that this is thoroughly sufficient and makes a much smaller knot to be covered.

Although a round needle is possibly the best kind, yet others can be used. I have found a Hagadorn much easier to use, but it has the disadvantage of making a much larger opening into the intestine and therefore one which is not so easily filled by the ligature.

In tieing the ligature as much traction should be made as the ligature can well stand, for if it be too loosely tied the ligature will be much slower to cut through, thus lengthening the time before the communication is established between the stomach and intestine.

With the ligature tied and secured the running suture of silk should then be continued around the elastic knot to entirely surround and inclose it, thus burying it to cut its way through the tissues and enclosing it so that no fecal matter can escape into the peritoneal cavity. Nothing then remains but to close the abdomen. Some practical suggestions from the experimental work I have done on dogs in this:

The first dog I operated upon died. Upon post mortem I found septic peritonitis from faulty technique. There had been a leakage from the intestine as the running suture of silk had not been made secure enough. I have not since had the same thing happen.

In the first few cases I did not include enough surface in the ligature, thus making the opening too small.

I found the opening to become established in from three to five days. Let me here quote again from McGraw:

"Animal killed after twenty-four hours showed no change in the condition of the intestines operated on, except a partial obliteration of the folds, caused by a ligature, and an adhesion of the adjacent peritoneal surfaces. No opening became as yet apparent at the seat of ligation. After forty-eight hours the intestines resumed their normal shape, all folds had disappeared, the adhesions had become firmer, and the rubber was seen to have slightly cut through the enclosed structures. At the end of seventy-two hours a free space usually appeared on each side of the ligature, through which water could be made to pass from one intestine into the other. The ligature still hung in the middle on uncut tissue. At the end of the fourth day the opening became complete, the ligature disappeared, and the anastomosis was accomplished. As the ligature cut through, the edges of the mucous membranes of each gut became glued together and united, and the result was a smoothed, healed edge all along the opening. The irritation caused by a rubber ligature in the peritoneum was just sufficient to cause adhesion of the surfaces with the intervention of hardly any appreciable amount of exudation. The length of the orifice formed was found to be equal to that of the tissue inclosed in the knot. Whether subsequent contraction with partial obliteration of the orifice, such as has happened after other methods of producing anastomosis, would follow in course of time, is as yet uncertain. Variations were occasionally found in the course described. I have seen the opening completed at the end of the third day, and have seen it incomplete at the end of the

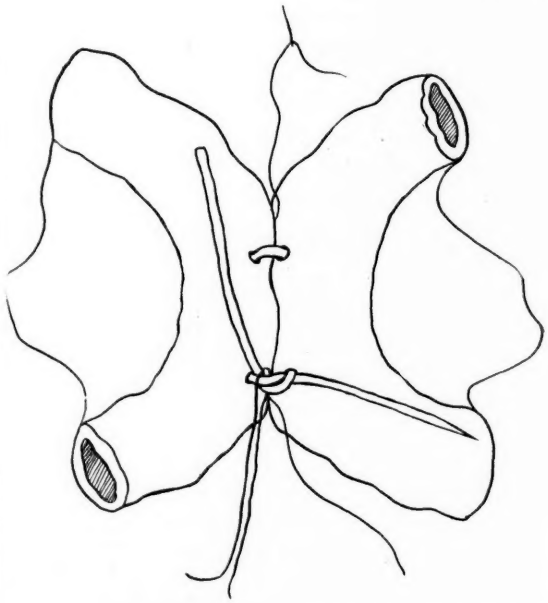

Fig. 3. (Semi-diagramatic). Third step. Tie in ligature begun, surrounding ligature of strong silk in place ready t tie when elastic ligature is drawn tight.
It then remains only to continue the runningure otof us silk around the elastic knot.

fifth; but in general, if the operation is done as I described it, the result will be as I have stated."

DISCUSSION.

F. B. WALKER.

The choice of method of gastro-intestinal or intestinal anastomosis naturally depends both on the adaptability of procedure and the ability of a surgeon to use it. Of two equally good methods one would use that which is easiest of performance. The McGraw ligature is simple and at the same time practical. It is, however, a mechanical device like the Murphy button, and both will require some experience to use them. The result will depend upon the elasticity of the ligature and the manner in which it is tied. I have seen a diaphragm of uncut tissue after three weeks in a dog. Personally I like the suture method of anastomosis, which does not depend upon any mechanical device and which at the same time provides at once a permanent lumen. The McGraw ligature does, however, have its peculiar advantages, and will grow in popularity.

T. A. M'GRAW

Said that he had used it on thirty-five dogs without a single failure to cut through in from five to seven days. But as the human intestine was much more delicate in structure, the ligature should cut through in from three to five days.

J. H. CARSTENS

Said that he had used the Murphy button for end-to-end anastomosis, also for lateral formerly, but had lately used the elastic ligature for all lateral anastomosis. He had used catgut to amplify the elastic ligature, but found that it gave way too soon, and wanted to make the special point that *silk should always be used.*

He had cases operated upon four and five years ago still living, and thinks it is a most excellent device.

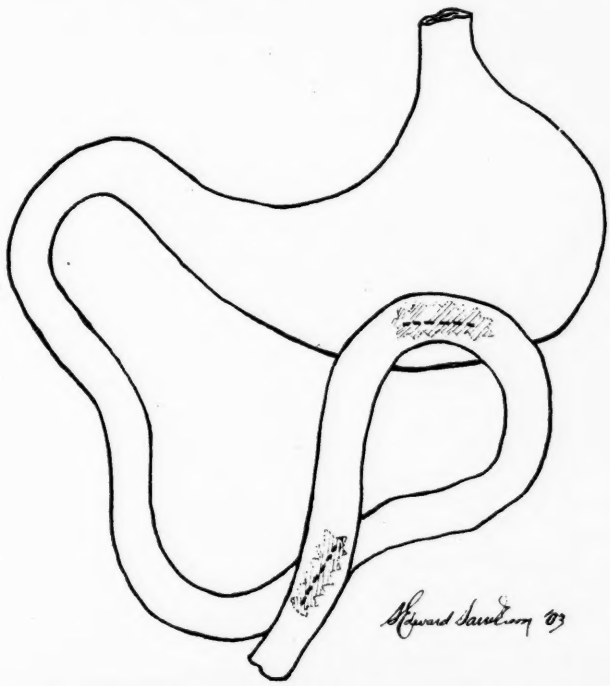

Fig. 4. (Diagramatic). Showing location for gastro-enterostomy and point for entero-enterostomy. Heavy dotted line indicates opening made by elastic ligature. Fine dotted line indicates running suture of silk. Shaded area indicates portion of approximated serous coat which becomes firmly united.

WM. F. METCALF.

As a general principle in gastro-enterostomy, or in entero-enterostomy, that method is to be preferred in which no reliability has to be placed upon any mechanical device; that method in which the openings are made as large as needed and the serous surfaces sutured together. There is then no anxiety about the elastic ligatures not cutting through, nor about mechanical devices not passing away. I believe the McGraw ligature makes gastro-enterostomy easier, and is safe and

efficient when properly used. As suture material I prefer celluloid thread.

I have a case now at Harper Hospital, the treatment of which illustrates a number of points relative to the subject in general, and to the use of the McGraw ligature in particular. She entered Harper about two months ago. She had vomited every day for four years. In the beginning the vomitus was bloody. For a month before entering the hospital she had retained nothing in the stomach. Examination showed stomach greatly dilated, typanitis extreme, and tumor in region of the gall-bladder. Examination of the blood after entering the hospital, December 12, showed 2,201,000 red corpuscles, 15 per cent. of haemoglobin, color index .34. December 24, 2,452,000 red, haemoglobin 25 per cent., color index .5. January 7, red 2,556,000, haemoglobin 30 per cent., color index .6. January 16, reds 3,518,000, haemoglobin 50 per cent., and color .71; and this improvement came entirely through rectal feeding.

I made an incision January 19, finding a hard tumor of the pyloris, with firm and extensive adhesions. I performed gastro-enterostomy by McGraw ligature, attaching the jejunum about eight inches from its duodenal junction to the posterior wall of the stomach. After anast. was complete I stitched two or three inches of the jejunum to the stomach wall toward the cardia to prevent the formation of vicious circle. In twenty-four hours the tympanitis had disappeared, the ligature having been tied so tight that it made an opening for the gas in a few hours. She is now sitting up, is ravenously hungry, and is eating and digesting a large quantity of solid food.

J. N. BELL.

It has been my privilege to witness the operation of gastro-jejunostomy with the McGraw ligature, performed by Dr. J. H. Carstens, on one of my patients, a woman of 50 years of age, and later on to assist Dr. Hugh Mulheron in performing an autopsy on the same case.

It was found post mortem that the opening was barely large enough to admit the point of the little finger. The deduction to be made from this finding would be to take a good bite of about three inches in length with the ligature when doing the operation. The patient spoken of was relieved of her distressing pain and vomiting for about three months.

H. O. WALKER

Said he had used the method upon many cases and considered it unequaled in the cases suited to its use.

HAL. C. WYMAN.

There are myriads, almost, of devices for uniting intestines. I believe in sutures. For gastro-enterostomy the McGraw elastic ligature, devised by and named for a distinguished citizen of Detroit, is the best of all the means offered for bringing about the desired result—a perfect blending of stomach and small intestine, with ample opening to transmit stomach contents. When the elastic ligature was first offered to the profession I used it in some cases of lateral anastomosis, but later abandoned and condemned it because it crumpled the bowel into such a small mass that I feared the opening from one channel to the other would not be large enough to carry normal intestinal stream.

The experiments submitted by Dr. Sanderson to-night demonstrate the usefulness of the elastic ligature generally for gastro-enterostomy and show that my fears of insufficient opening were not well founded.

In closing, Dr. Sanderson said: In gastro-enterostomy, as in all other branches of surgery, many men have many methods, a surgeon using that method which in his hands has given best results. I believe that the method of McGraw stands in a class by itself, being the best method for most cases, and will come into far wider if not almost universal use in suitable cases as the technique becomes more familiarly and widely known.

To speak of vicious circle would open up such a wide field for discussion that I will here speak only of the best accepted method of preventing the complication, which is by taking the precaution to do entero-enterostomy between the efferent and afferent loops of intestine.

(See Fig. H.)

HUGH MULHERON, Secretary.

KALAMAZOO COUNTY.

The Kalamazoo County Medical Society met as guests of President C. H. McKain at Vicksburg on Thursday afternoon, March 26th, at 4 o'clock in the rooms of the Ladies' Library. Dr. H. W. Longyear, of Detroit, read a paper on "Tubercular Peritonitis," and the discussion was led by Dr. C. K. LaHuis, of Kalamazoo.

The society completed its organization at this meeting and an opportunity was given to the members to sign the constitution and by-laws. After the session lunch was served.

HERMAN OSTRANDER, Secretary.

Obituary

FRANKLIN B. GALBRAITH, 1840-1903.

Franklin B. Galbraith, M. D., was born in Sanilac county, Mich., near Port Huron, December 26, 1840. His entire life presented a striking example of perseverance, diligence and untiring devotion to knowledge; he was always an indefatigable worker, laboring not merely at work belonging to his own profession, but also with the utmost eagerness seeking and storing knowledge purely for the love of it. The result of his unwearied labors was the attainment of a prominent position among the members of his profession.

Dr. Galbraith was of substantial ancestry. His grandfather, John Galbraith, was born near Glasgow, Scotland. His father, Dr. John Galbraith, was a native of Canada, who for many years lived in Sanilac county, and there died in 1880. His mother, who bore the maiden name of Nancy Humphry, was of Canadian birth and Irish descent. She passed away in 1878, two years prior to the demise of her husband.

In his early youth Dr. Galbraith attended the schools of the vicinity, and at the age of thirteen years clerked in a store. When seventeen years old he entered the medical department of the State University at Ann Arbor, where he was graduated at the age of twenty-one years. In 1860 he went to New York and attended the College of Physicians and Surgeons, graduating in 1861. Immediately after graduating he commenced the practice of his profession at Lexington, this state, and continued there until October, when he was commissoned assistant surgeon of the Tenth Michigan Infantry. In April, 1862, he was sent to Tennessee.

On account of failing health, Dr. Galbraith retired and returned to Port Huron, and there took charge of the practice of Dr. C. M. Stockwell, who went into the army. In 1863 Dr. Galbraith was appointed Surgeon of the Board of Enrollment with headquarters at Pontiac. He was afterward commissioned as surgeon of the thirty-first regiment, which, however, did not go out as an organization, but was broken into fragments which went to replenish other organizations already in the field. The doctor was transferred to the Fourth Michigan Cavalry, and with them went to the front and participated in active warfare. When the war was nearly over he resigned his appointment, and coming home, located in Pontiac. Since settling here he devoted his undivided attention to his profession, and built up an extensive and lucrative practice.

The doctor was an honored member of the State Medical Society and the American Medical Society. He was elected mayor of Pontiac three times on the Republican ticket, and his intelligent and faithful discharge of the duties of that office reflected great credit upon himself as well as upon his constituents. His election was considered by his friends a great triumph, for the city was at that time very strongly Democratic. Socially Dr. Galbraith belonged to Pontiac Lodge No. 21, F. & A. M., and the Loyal Legion. In 1889 he was chosen State Senator from the fourteenth senatorial district on the Republican ticket and was ever faithful to the interests of the people whom he represented.

The marriage of Dr. Galbraith and Miss Maria Smith, of Pontiac, was solemnized in 1865. Two children were born to them, Dr. Stuart and Grace, now wife of James H. Harris, superintendent of schools in Pontiac.

WILBUR C. WRIGHT, 1857-1902.

Dr. W. C. Wright, one of the most esteemed citizens of Unionville, died at his home Saturday morning, Dec. 29, 1902.

Dr. Wright was a noble man, an exemplary Christian, a progresssive citizen, and one who was ever ready with his skill, his education or his money to assist any project that was for the betterment of his fellow men, his church or his town. He was a thorough and progressive student, a self-made man in every sense of the word, and his excellent advice, cheering smile and word will be missed nowhere more than by the school children. He was ever particularly interested in education and embraced every opportunity to encourage the young for habits of study and usefulness. He was a successful and skilled physician and enjoyed a very large and well paying practice.

Dr. Wilbur C. Wright was born in Antrim Township, Shiawassee County, Jan. 23, 1857, and was a son of Isaac and Elizabeth Wright. While a young boy he removed to St. Johns, where he received a high school education and graduated there in 1882. He followed the vocation of teaching for a while and then entered the State University at Ann Arbor, whence he graduated in 1887. That same year he came to Unionville and began the practice of his chosen profession. Three times he has been to New York and taken post-graduate courses for surgery, the eyes, nose and throat, and gynecology. In 1900 he went abroad and visited the leading countries and cities of Europe and attended the Paris Exposition.

Communications.

THE IDEAL HEALTH OFFICER.

THE EDITOR—I accepted appointment as a member of the Detroit Board of Health from Gov. Pingree on Feb. 21, 1899, which appointment was confirmed by the State Senate the fourteenth day of the month following, for the term ending February 28, 1903.

On March 15, 1899, certain thoughts of mine appeared in the Detroit Evening News concerning the workings of the Detroit Health Department, and the kind of man needed as Health Officer. Said thoughts later became my convictions, and were contained in my fixed policy; and were, viz.:

(*a*) Health Officer to be a clinical physician with executive ability, and to have had personal experience diagnosing contagious diseases, including smallpox, scarlet fever and diphtheria.

(*b*) Health Officer to examine *personally* suspicous or doubtful cases reported to the Department, and meet *personally* private physicians asking consultation thereon.

(*c*) Health Office to be operated on practical business principles, and without political coloring.

(*d*) Methods of Health Office to be up-to-date, but for every dollar of cost of maintenance the Department to obtain full value in practical results—all unnecessary expense to be eliminated.

(*e*) All Health Department work of a medical nature to be performed by the salaried physician employes of the city.

(*f*) Health Officer and all employes to give their entire time to the Department. Under no circumstances should persons on regular salary be paid extra compensation.

Spencer says: "Political life is healthy only in proportion as it is conscientious." I have endeavored faithfully to enforce the above policy, as well as all health laws and ordinances applicable to Detroit, with what success the official records of the Detroit Board of Health will show.

Respectfully, JOHN L. IRWIN.

Detroit, February 28th, 1903.

OSTEOPATHY AND THE LAW.

The method of treatment sailing under the flag of osteopathy is engaging considerable attention recently, especially because of Professor Lorenz's visit to this country, which has familiarized the public with the fact that massage and orthopedic treatment is only a branch of general medicine. I will quote from the third annual report of the committee of the American Medical Association on National Legislation, 1902, pages 57 and 59:

"In the month of January of this year, in the Legislature of the State of New York, there was introduced a bill in the Senate, entitled 'An Act regulating and legalizing the practice of osteopathy in the State of New York, and fixing penalties for the violation thereof.' * * * The objections to the osteopathy bill were summarized as follows:

"First—Osteopathy, so-called, is an agent or method used in the treatment of disease, and should not be separated from the general practice of medicine.

"Second—Osteopathy should not be made a special branch of medicine by an act of the Legislature, but should come under the present State laws, which govern all the special branches as well as the general practice of medicine.

"Third—The Legislature should protect the public by denying the endorsement of the State to any person, as being capable of treating the diseases of the human body, unless such person can make a diagnosis of the condition of the human body, to do which requires a full knowledge of the science of medicine, including the use of drugs and other valuable therapeutic agents.

"Fourth—If the so-called osteopathic bill becomes a law, all candidates who fail to pass the regents' examinations to obtain a license to practice medicine in this State may in this State treat all diseases of the human body by holding a diploma from any regular osteopathic college in the United States—a privilege which a graduate from Harvard or Yale Medical College, for instance, does not enjoy.

"And finally, it would be much more right and reasonable for the Legislature to separate the special branches of real estate corporations and criminal law from the general practice of law and to establish for each of them a special examining board, so as to make it easier for the candidates for admission to the bar who desired to practice as specialists, than it would be for this Legislature, through this committee, to select one separate therapeutic agent used in the treatment of disease and separate it from the general practice of medicine, as a panacea for all diseases, at the request of those ephemeral enthusiasts who now ask for a special osteopathic examining board.

"After the hearing the Judiciary Committee killed the bill by a vote of 7 to 2."

Osteopathy is legalized in several States. The writer asked the authoritative sources of some States why osteopathy was legalized, and whether any steps were intended to be taken in regard to osteopathy. Of the answers received, the following may be quoted:

1. * * * "Replying to your letter of recent date, I have to say that the osteopaths have been recognized in this State. I inclose you herewith a copy of the law, so that you may see upon what conditions they are allowed to practice. It would be hard, I think, to give you the reasons for this legislation. I may say, however, that the vote was so close in the House of Representatives that the bill was passed by the vote of a ——— physician, and so close in the Senate that it was passed by the vote of a ——— physician. You can draw your own inference. I think it is a disgrace upon the State," etc.

2. * * * "By referring to Section 4403-f of the inclosed law you will note what recognition is given to osteopaths in the State of ———. You will also note that they are required to have the same preliminary requirements as physicians and to pass two examinations, one before an osteopathic examining committee appointed by this board, and the second one before this board in the subjects of anatomy, physiology, obstetrics and physical diagnosis, before they are permitted to practice in this State.

"No steps are being taken in ——— against legally qualified osteopathic practitioners, but those who are found to be practicing without legal qualifications are promptly notified, and, if they continue to practice, are prosecuted.

"Personally, I am of the opinion that the osteopathic clause of the ——— law is a very good provision, since it does away with the cry of the laity that the physicians are attempting to shut out practitioners of osteopathy, and at the same time, by compelling the osteopath to pass rigid requirements, it insures that such persons will be safe practitioners if they are able to secure a certificate in the State. I believe that more can be accomplished by this method than by an attempt to arbitrarily shut out this class of practitioners," etc.

3. * * * "Your letter received this morning referring to osteopaths being licensed in this State. They simply have a little statutory law which grants them the right to practice medicine in the State of ———; but they do not come under the practice act of medicine, neither do the State Board of Health recognize them as doctors, and have no disposition to so recognize them, nor to place them in a position on the Board of Health where they might feel that they are doctors. We think that this is about the best disposition to make of them. Where a Board of Health recognizes them and examines them for license, then they feel that they are one of the medical fraternity and entitled to all of the recognition of the medical profession. We would be glad to give you any further information regarding the matter that you may desire," etc.

4. * * * "I enclose you a copy of our law. The osteopaths have a law of their own in this State, and they are exempted from the action of our law, as they use no medicine. In our State they are ignored, and are doing no good except in a few places where the profession advertises them. We treat them and speak of them as masseurs, and most of the communities refer to their so-called treatments as a "course of massaging." The onlv osteopath left in this county is now at one of our colleges studying medicine. In my opinion, the less they are noticed, except to refer to them as masseurs, the better. It is a fad similar to many others, and must have its day. It is far less dangerous than 'Christian Science,' 'Dowieism,' etc."

5. * * * "Osteopathy crept into our laws four years ago by a fluke. It was passed by the House as a 'joke,' with the expectation of its being killed in the Senate. The Senate passed it, and the Governor, who was in the last stages of consumption and promised relief by its votaries, signed it. Two years ago we tried to get it eliminated and our law brought up-to-date, but a powerful member of the Senate, as a method of revenge for failure to coerce its introducer to one of his schemes, emasculated the bill, and we came near losing our present law. The same Senator is still on deck, and threatens to 'do us' if we attempt anything at this session," etc.

6. * * * "Osteopathy has been recognized in ——— by the Legislature. You ask, Can I give a reason for it? Can you give a reason for the dense stupidity of a lot of country farmers, assuming to legislate on matters of medical science? I leave the question with you. I do not think any steps will be taken against it at this session of the Legislature," etc.

* * * "Our Legislature has passed an act legalizing the practice of osteopathy by the graduates of the Kirksville and Boston schools. It is said that the act was passed mainly by the efforts of certain influential men who had relatives practicing that cult. I don't know how true this report is, but know very strenuous opposition was made to its passage, and it is not likely that any great effort will be made for its repeal at present. After half a century of medical experience I have come to the conclusion that it is not the best way to suppress quacks by giving them gratuitous advertisement and allowing them to pose as martyrs. If the regulars are high-toned gentlemen and thoroughly competent physicians,

the charlatans soon find their level. If the regulars are half-educated, drunken, low-lived scandal mongers they ought not to have fostering legislation. If they are well-posted, efficient, conscientious and chivalrous men they generally don't need it.

"I have no reason to believe that the number of osteopaths is increasing in this State. There are none in this town, and the only one from here who has graduated from an osteopathic school, after practicing and lecturing in the west for two or three years, came and asked me what regular medical college I would recommend him to enter. He has abandoned osteopathy, I hear.

"Ever since adopting the medical vocation I have tried to promote harmony among our members and a high regard for the dignity of the profession. Our local club has welcomed the educated homeopaths, putting them on the committees and assigning papers to them the same as to the other members. For years I have not known of their violating any rule in our code. Now they rarely send away for counsel, but go to the local regulars for help in their difficult cases.

"Practice here is now much more pleasant than when I was a boy. Then every doctor had a chronic quarrel with his neighbor, professional reputation was low, and quackery flourished.

"Now, although we do not contest them, the eclectics, clairvoyants, magnetizers, etc., etc., have had a poor show in this place for many years," etc.

The foregoing is brought to the attention of the medical profession in Michigan with the purpose to furnish a basis for further thoughts and for unbiased and fair action when such should be demanded.

EMIL AMBERG, Detroit.

PROOFS SHOULD BE IMMEDIATELY READ AND RETURNED.

THE EDITOR—I am deeply mortified to read the report of my discussion of Dr. Hafford's paper on "Considerations of Some Cardiac Problems," printed in the March number, 1903. It is inaccurate in substance and in tone. I hereby warn any practitioner against following any suggestions embodied in this report.

I blame only myself, because I neglected to revise and return the proof which was courteously submitted for my correction.

Yours truly,

A. W. CRANE.

Kalamazoo, March 7, 1903.

[The editor sincerely regrets this occurrence, and would earnestly request that the members return at once, corrected, the proofs sent for revision. It is simply impossible for the editor to know whether the substance matter is correctly reported.]

FOR THE INFORMATION OF THE MEMBERS GOING TO THE NEW ORLEANS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The following communication was received by the Secretary of the State Society, and is published for the information of the members:

On account of the American Medical Association meeting to be held at New Orleans, May 5th to 8th, 1903, the *Wabash Railroad,* in connection with the Illinois Central Railroad, will make a rate of one fare ($27.10), Detroit to New Orleans and return. Tickets on sale May 1, 2, 3, good for return within ten days. By depositing ticket with the joint agent not later than May 12th, and payment of fee of 50 cents, return limit of ticket may be extended to May 30th.

For members and their friends, the *Wabash* will run Pullman palace sleeping car, Detroit to New Orleans, without change, should there be a sufficient number of passengers to warrant, as per following:

ITINERARY.

DETROIT TO NEW ORLEANS VIA ST. LOUIS, MEMPHIS AND VICKSBURG.

Leave Detroit ..	7:40 a. m.	3:20 p. m.	2:10 a. m.
Arr. St. Louis..	7:15 p. m.	7:30 a. m.	2:00 p. m.
Lve. St. Louis..	10:30 p. m.	*7:20 a. m.	2:44 p. m.
Arr. Memphis..	8:20 a. m.	6:40 p. m.	12:10 a. m.
Lve. Memphis..	8:45 a. m.	7:10 p. m.	
Arr. Vicksburg.	6:05 p. m.	2:35 a. m.	
Lve. Vicksburg.	6:05 p. m.	2:35 a. m.	
Lve. Baton Rouge	2:55 a. m.	7:05 a.m.	
Arr. New Orleans	6:00 a. m.	9:50 a. m.	

*Connect at East St. Louis.

DETROIT TO NEW ORLEANS VIA ST. LOUIS AND MEMPHIS.

Leave Detroit ..	7:40 a. m.	3:20 p. m.	2:10 a. m.
Arr. St. Louis..	7:15 p. m.	7:30 a. m.	2:00 p. m.
Lve. St. Louis..	10:30 p. m.	*7:20 a. m.	2:44 p. m.
Arr. Memphis .	8:30 a. m.	6:40 p. m.	12:10 a. m.
Lve. Memphis..	8:55 a. m.	7:00 p. m.	12:25 a. m.
Ar. New Orleans	7:55 p. m.	7:25 a. m.	11:25 a. m.

*Connect at East St. Louis.

For more detailed information, sleeping car accommodations, etc., call or write, Wm. Israel, T. P. A., Illinois Central R. R., No. 7 Fort Street West, Detroit; A. F. Wolfschlager, Passenger and Ticket Agent, Wabash R. R., No. 9 Fort Street West, Detroit.

PROGRAM

— OF THE —

38th Annual Meeting

— OF THE —

Michigan State Medical ... Society ...

At the Masonic Temple,
Detroit, Mich.

Thursday and Friday,
June 11 and 12, 1903

THE COUNCIL

Wednesday, June 10th, 1 o'clock P. M. Standard, at Hotel Cadillac.

Thursday, June 11th, 4 o'clock P. M. Standard, at Masonic Temple.

Friday, June 12th, 4 o'clock P. M. Standard, at Masonic Temple.

Organization and Election of Officers.

HOUSE OF DELEGATES

MASONIC TEMPLE

BY-LAWS—CHAPTER IV. Section 1. Each Component County Society shall be entitled to send to the House of Delegates each year one delegate for every 50 members, and one for each major fraction thereof; but each County Society holding a charter from this Society, which has made its annual report as provided in this Constitution and By-Laws, shall be entitled to one delegate.

PRELIMINARY MEETING

WEDNESDAY, JUNE 11TH
7.30 P. M. STANDARD

1. Call to order by the President
   A. E. BULSON, Jackson.
2. Report of the Council
   LEARTUS CONNOR, Detroit, Chairman.
3. Report of Committee on Legislation
   B. D. HARISON, Sault Ste. Marie, Chairman.
4. Report of Auxiliary Committee of Committee on National Legislation
   EMIL AMBERG, Detroit.
5. Report of Committee to petition the Legislature for an appropriation for the establishment of a properly equipped Sanitarium for the *Treatment of the Early Stages of Tuberculosis*
   V. C. VAUGHAN, Ann Arbor, Chairman.

6. Report of the *Michigan Representatives in the House of Delegates* of the A. M. A.
H. O. WALKER, Detroit, Senior Member.

7. Miscellaneous Business
a) Appointment of Committee on Nominations of 5 to nominate

1st, 2d, 3d, and 4th Vice-Pres.
4 Councilors for 2 years
4 " " 4 "
4 " " 6 "
2 Representatives in House of Delegates, A. M. A., for 1 year
2 Representatives in House of Delegates, A. M. A., for 2 years
To fix Place of Meeting for 1904

Adjournment.

FIRST DAY, THURSDAY, JUNE 11TH

8.30 A. M. STANDARD

Unfinished and Miscellaneous Business.
Adjournment to General Meeting.

SECOND DAY, FRIDAY, JUNE 12TH

12 O'CLOCK NOON STANDARD

1. Report of Committee on Nominations.
2. *Unfinished and Miscellaneous Business.*
Adjournment.

GENERAL MEETING

MASONIC TEMPLE

FIRST DAY, THURSDAY, JUNE 11TH

10 A. M. STANDARD

1. Call to order by the President
A. E. BULSON, Jackson.
2. Report of Committee on Arrangements
H. O. WALKER, Chairman.
3. Address of the President
A. E. BULSON, Jackson.
"*Reorganization of the Medical Profession of Michigan, with Suggestions for the Future.*"
4. Oration on Surgery
F. W. ROBBINS, Detroit.
"*The Surgeon: His Opportunities and Responsibilities.*"
5. Miscellaneous Business
a) Nominations for President

Adjournment.

SECOND DAY, FRIDAY, JUNE 12TH

11 A. M. STANDARD

1. Unfinished Business.
2. Report from the House of Delegates.
3. Oration on General Medicine
I. H. NEFF, Pontiac.
"*The Role of Suggestions in Therapeutics.*
4. Oration on Obstetrics and Gynecology
F. A. GRAWN, Munising.
"*Obstetrics in General Practice.*"
5. Miscellaneous Business.
At 12 o'clock Standard the result of the ballot for President will be announced.

Adjournment.

SECTION ON GENERAL MEDICINE

FIRST DAY, THURSDAY, JUNE 11TH

2 P. M. STANDARD

1. Report of a Case of Bilateral Cystic Kidney
H. E. RANDALL, Lapeer.
2. Reflex Disturbances from Eye-Strain
O. A. GRIFFIN, Ann Arbor.
3. Headache JEANNE C. SOLIS, Ann Arbor.
4. The Essential Points of Distinction between Cerebral and Mental Disease
HIRAM A. WRIGHT, Detroit.
5. Some Clinical Observations on Defective Metabolism as a Factor in the Production of some Forms of Mental and Nervous Disease.
SAMUEL BELL, Detroit.
6. The Treatment of the Hypertrophies of the Lymphoid Ring B. R. SHURLY, Detroit.

Adjournment.

SECOND DAY, FRIDAY, JUNE 12TH

8.30 A. M. STANDARD

1. Rectal Examination: Its Importance and Value in General Practice
   LOUIS J. HIRSCHMAN, Detroit.
2. Skiascopy of the Heart
   A. W. CRANE, Kalamazoo.
3. On Ultra-Microscopic Organisms
   F. G. NOVY, Ann Arbor.
4. Modified Milk for the Babies of Detroit
   COLLINS H. JOHNSTON, Grand Rapids.
5. Demonstration of Specimens from the Pathological Exhibit
   A. S. WARTHIN, Ann Arbor.

Adjournment to General Meeting.

SECOND DAY, FRIDAY, JUNE 12TH

2 P. M. STANDARD

Election of Chairman, Secretary (for 2 years) and Orator of Section.

1. The Treatment of Flatulency
   CHAS. D. AARON, Detroit.
2. The Etiology and Treatment of Hyperacidity of the Stomach Contents
   DAVID M. COWIE, Ann Arbor.
3. The Management of Small-Pox in Houghton County, with Report of 280 Cases
   W. H. MATCHETTE, Hancock.
4. Prevention of Gynesic Evils
   J. A. PORTER, Brooklyn.
5. Differential Diagnosis of Typhoid Fever
   W. A. FERGUSON, Sturgis.
6. Some Considerations upon Infant Feeding
   ALEX. M. CAMPBELL, Grand Rapids.
7. Hyperemesis Gravidarum
   LEO BREISACHER, Detroit.
8. Itching: Its Significance as an Exciting Factor. Measures used for its Relief
   ANDREW P. BIDDLE, Detroit.

Adjournment.

SECTION ON SURGERY, OPHTHAMOLOGY AND OTOLOGY

FIRST DAY, THURSDAY, JUNE 11TH

2 P. M. STANDARD

1. Excision of Hemorrhoids
   WM. L. DICKINSON, Saginaw.
2. A New Procedure for Avoiding Infection After Operation for Cataract
   WALTER R. PARKER, Detroit.
3. The Omentum
   W. H. HAUGHEY, Battle Creek.
4. The Climacteric Tumors of the Breast
   T. A. MCGRAW, Detroit.
5. The Epiphyses from a Radiographic Standpoint (Illustrated by Lantern Slides)
   PRESTON M. HICKEY, Detroit.

Adjournment.

SECOND DAY, FRIDAY, JUNE 12TH

8.30 A. M. STANDARD

1. Electro-physics and their Application to the Scientific Treatment of Disease
   C. L. BARBER, Lansing.
2. Report of Two Cases of Cancer of the Breast occuring in Women under twenty-five years of age
   W. A. SPITZLEY, Detroit.
3. The Bougie-Catheter: An Apparatus for Use in Genito-Urinary Surgery
   S. C. GRAVES, Grand Rapids.
4. Surgery of the Mediastinum; with Report of the Successful Removal of a Tumor from the Anterior Mediastinum
   H. O. WALKER, Detroit.

Adjournment to General Meeting.

SECOND DAY, FRIDAY, JUNE 12TH

2 P. M. STANDARD

Election of Chairman, Secretary (for 2 years) and Orator of Section.

1. Only a Drop of Pus
   F. J. W. MAGUIRE, Detroit.
2. Report of Five Rare Abdominal Cases:
   a) Rupture—Tubal Pregnancy (two cases)
   b) Resection of Intestine
   c) Caesarian Section
   d) Gastrostomy
   I. N. BRAINERD, Alma.
3. Contribution to the Surgery of the Knee-joint
   MAX BALLIN, Detroit.
4. Railway Injury to the Pelvis with Laceration of the Urethra
   RALPH H. SPENCER, Grand Rapids.
5. Comparisons in Technic of Gastro-Enterostomy with Description of the McGraw Elastic Ligature
   S. E. SANDERSON, Detroit.
6. Abuse of Inflation and Massage of the Middle Ear
   EMIL AMBERG, Detroit.

Adjournment.

SECTION ON OBSTETRICS AND GYNECOLOGY

FIRST DAY, THURSDAY, JUNE 11TH

2 P. M. STANDARD

1. The Lacerated Cervix Uteri: Amputation or Trachelorrhophy—Which?
   H. WELLINGTON YATES, Detroit.
2. Prolapse of Uterus, Bladder and Vagina
   J. G. LYNDS, Ann Arbor.
3. Ectopic Gestation with Report of Cases
   WM. F. METCALF, Detroit.
4. Fibromata of the Vulva with Report of Case
   T. S. BURR, Ann Arbor.
5. Ovarian Dermoids
   R. E. BALCH, Kalamazoo.

Adjournment.

SECOND DAY, FRIDAY, JUNE 12TH

8:30 A. M. STANDARD

1. Dilatation and Curettage
   W. H. MORLEY, Ann Arbor.
2. A Case of Streptococcic-puerperal Infection, successfully treated, in which Serum Therapy was used H. W. LONGYEAR, Detroit.
3. Removal of Appendix during Abdominal Section J. H. CARSTENS, Detroit.
4. Uterine Fibroma as a Complication of Pregnancy
   REUBEN PETERSON, Ann Arbor.

Adjournment to General Meeting.

SECOND DAY, THURSDAY, JUNE 12TH

2 P. M. STANDARD

Election of Chairman, Secretary (for 2 years) and Orator of Section

1. The Sequelae of Lacerations of the Cervix
   R. L. MORSE, Ann Arbor.
2. The Value of Conservative Operations on the Uterus and Appendices
   W. P. MANTON, Detroit.
3. Endometritis—Both from a Surgical and Medical Standpoint
   O. S. PHELPS, Battle Creek.
4. A Study in Cases illustrating points of Diagnosis in obscure Appendicial Diseases and others simulating Appendicitis
   H. W. LONGYEAR, Detroit.
5. A Study of some difficulties in the use of the Obstetric Forceps
   JAMES E. DAVIS, Detroit.

Adjournment.

OFFICERS OF THE SOCIETY

President—A. E. BULSON, - - - - Jackson.
Vice-Presidents—C. J. WILLSON, Flint; A. W. CRANE, Kalamazoo; W. K. WEST, Calumet; H. B. GARNER, Traverse City.
Secretary—A. P. BIDDLE, - - - - Detroit.
Assistant Secretary—GUY L. CONNOR, - - Detroit.
Treasurer—CHAS. E. HOOKER, - - Grand Rapids.

OFFICERS OF SECTIONS

General Medicine—GEO. F. BUTLER, Alma, *Chairman;* WILLIS S. ANDERSON, Detroit, *Secretary;* I. N. NEFF, Pontiac, *Orator.*

Surgery, Ophthalmology and Otology—K. GUNSOLUS, Detroit, *Chairman;* W. A. SPITZLEY, Detroit, *Secretary;* F. W. ROBBINS, Detroit, *Orator.*

Obstetrics and Gynecology—R. R. SMITH, Grand Rapids, *Chairman;* C. K. LAHUIS, Kalamazoo, *Secretary;* F. A. GRAWN, Munising, *Orator.*

COUNCIL

1 LEARTUS CONNOR, Detroit, *Chairman.*
2 N. H. WILLIAMS, Jackson.
3 W. H. HAUGHEY, Battle Creek, *Secretary.*
4 G. W. LOWRY, Hastings.
5 J. B. WHINERY, Grand Rapids.
6 C. B. BURR, Flint.
7 OLIVER STEWART, Port Huron.
8 S. I. SMALL, Saginaw.
9 B. H. MCMULLEN, Cadillac.
10 H. B. LANDON, Bay City.
11 W. T. DODGE, Big Rapids.
12 THEO. A. FELCH, Ishpeming.

HOUSE OF DELEGATES

Allegan Co.....M. CHASE, of Otsego.
Alpena Co.....D. A. CAMERON, of Alpena.
Barry Co.....D. E. FULLER, of Hastings.
Bay Co.....J. W. HAUXHURST, of W. Bay City.
Berrien Co.....W. L. WILSON, of St. Joseph.
Branch Co.....
Calhoun Co.....A. W. ALVORD, of Battle Creek.
Cass Co.....W. J. KETCHAM, of Dowagiac.
Charlevoix Co.....C. A. SWEET, of East Jordan.
Chippewa Co.....G. J. DICKISON, of Sault Ste. Marie.
Clinton Co.....J. E. TAYLOR, of Ovid.
Delta Co.....R. S. FORSYTH, of Gladstone.
Eaton Co.....J. B. BRADLEY, of Eaton Rapids.
Emmet Co.....G. W. NIHART, of Petoskey.
Genesee Co.....G. V. CHAMBERLAIN, of Flint.
Gogebic Co.....
Grand Traverse Co....A. H. HOLLIDAY, of Traverse City.
Gratiot Co.....G. F. BUTLER, of Alma.
Hillsdale Co.....S. B. FRANKHAUSER, of Hillsdale.

Houghton Co.....C. H. RODI, of Calumet.
Huron Co.....D. J. MCCOLL, of Elkton.
Ingham Co.....A. D. HAGADORN, of Lansing.
Ionia Co.....F. W. BRALEY, of Saranac.
Iosco Co.....
Jackson Co.....D. E. ROBINSON, of Jackson.
Kalamazoo Co.....A. HOCHSTEIN, of Kalamazoo.
Kent Co.....J. A. MCCOLL, of Grand Rapids.
D. E. WELSH, of Grand Rapids.
Lapeer Co.....H. MCCOLL, of Lapeer.
Lenawee Co.....F. E. ANDREWS, of Adrian.
Livingston Co.....A. W. COOPER, of Fowlerville.
Macomb Co.....W. GREENSHIELDS, of Romeo.
Manistee Co.....J. A. KING, of Manistee.
Marquette Co.....F. M. HARKIN, of Marquette.
Mason Co.....W. H. TAYLOR, of Ludington.
Mecosta Co.....L. S. GRISWOLD, of Big Rapids.
Menominee Co.....
Midland Co.....F. A. TOWSLEY, of Midland.
Missaukee Co.....J. G. RIENBERG, of McBain.
Monroe Co.....P. S. ROOT, of Monroe.
Montcalm Co.....H. L. BOWER, of Greenville.
Oakland Co.....M. W. GRAY, of Pontiac.
O. M. C. O. R. O. Co...S. N. INSLEY, of Grayling.
Osceola Co.....T. F. BRAY, of Reed City.
Ottawa Co.....B. B. GODFREY, of Holland.
Saginaw Co .....T. M. WILLIAMSON, of Saginaw.
Sanilac Co.....H. W. SMITH, of Carsonville.
Shiawassee Co.....A. M. HUME, of Owosso.
St. Clair Co.....M. WILLSON, of Port Huron.
St. Joseph Co.....L. D. KNOWLES, of Three Rivers.
Tuscola Co.....P. J. LIVINGSTONE, of Caro.
Van Buren Co.....G. D. CARNES, of South Haven.
Washtenaw Co.....W. F. BREAKEY, of Ann Arbor.
Wayne Co..... A. D. HOLMES, D. INGLIS, W. F. METCALF, G. W. MORAN, E. L. SHURLY, F. B. TIBBALS, H. A. WRIGHT. } of Detroit.
Wexford Co.....C. E. MILLER, of Cadillac.

REPRESENTATIVES IN THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

H. O. WALKER, Detroit.
V. C. VAUGHAN, Ann Arbor.
THEO. A. FELCH, Ishpeming.
J. B. GRISWOLD, Grand Rapids.

SPECIAL COMMITTEES

COMMITTEE ON ARRANGEMENTS

H. O. WALKER, Detroit, *Chairman.*
E. L. SHURLY, Detroit.
A. D. HOLMES, Detroit
GUY L. CONNOR, Detroit.
ALLEN D. MCLEAN, Detroit.

AUXILIARY COMMITTEE TO COMMITTEE ON NATIONAL LEGISLATION, AMERICAN MEDICAL ASSOCATION

EMIL AMBERG, Detroit.

To Petition the Legislature for an Appropriation for the Establishment of a properly equipped Sanitarium for the Treatment of the Early Stages of Tuberculosis:

V. C. VAUGHAN, Ann Arbor, *Chairman,*
H. B. BAKER, Lansing.
L. W. BLISS, Saginaw.
C. G. JENNINGS, Detroit.

COMMITTEE ON LEGISLATION

B. D. HARISON, Sault Ste. Marie, *Chairman.*
GEORGE F. RANNEY, Lansing.
BION WHELAN, Hillsdale.

ENTERTAINMENTS

The Profession of Detroit will make ample provisions for the comfort and entertainment of the visiting members. Due notice will be given.

HOTELS

Cadillac (**Headquarters.**)
Russell House.
Normandie.
Griswold.

MISCELLANEOUS

All Meetings are held on Central Standard Time at the Masonic Temple, cor. Lafayette Ave. and First Street.

The *Exhibits* will be found on the top floor (the large Drill Hall) of the Masonic Temple.—Good Elevator service.

All meetings will be called to order promptly on time.

Each paper is limited to 15 minutes; each discussion to five minutes.

Each member in attendance shall enter his name in the Registration Book, indicating the County Society of which he is a member. *Please do not fail to register upon arrival at the Masonic Temple.*

Only Members who are registered are entitled to vote.

The ballot box for the election of *President* will be found at the Masonic Temple at the place of the General Meetings. The polls close at 12 o'clock noon, Standard, Friday, June 12th.

BY-LAWS—CHAPTER III, SECTION 5.

All papers read before the Society shall be its property. Each paper read shall be deposited immediately with the Secretary, but the author may also publish the same in any reputable journal not published in this State, provided the printed article bears the statement that it was "read before the Michigan State Medical Society."

HOTEL CADILLAC, Headquarters

REDUCED RAILROAD FARES

Excursion fares from all points in Michigan, except from local points on the Main Line of the M. C. R. R. and L. S. & M. S. Ry., from which the rate of fare is two cents per mile, have been granted for persons attending the meeting of the Michigan State Medical Society to be held at Detroit, June 11–12, upon the following conditions:

First. That *one hundred or more persons*, holding properly executed certificates of standard form, attend the meeting.

Second. Each person desiring the excursion rate must purchase a *first-class ticket to Detroit* for which he or she will pay the regular tariff fare of not less than 75 cents, and upon request, the *ticket agent* will issue a *printed certificate of purchase.*

Third. If through tickets cannot be procured at the starting point, parties will purchase to the nearest point where such through ticket can be obtained, and there purchase through to place of meeting, requesting a *Certificate from the Ticket Agent at the point where each purchase is made.*

Fourth. Tickets for the return journey will be sold by the Ticket Agent at the place of meeting at *one-third the first-class limited fare* only to those *holding Certificates signed by the Ticket Agent* at point where through ticket to place of meeting was purchased, countersigned *by signature written in Ink by the Assistant Secretary of the Society*, certifying that the holder has been regular in attendance at the meeting, and signed and stamped by the *Special Agent of the Michigan Passenger Association.*

Fifth. Tickets for return journey will be furnished only on Certificates procured not more than *three days before the meeting assembles; no stop-over privileges being allowed on tickets sold at less than regular unlimited fares. Certificates will not be honored* unless presented within *three days after the adjournment of the meeting.*

"No refund of fare can be expected because of failure of the parties to obtain Certificates."

A charge of 25 cents will be made at the meeting by Special Agent for each certificate issued by him.